The Builder.

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Ecclesiastical Zoology.

IN the year 1125, St. Bernard of Clairvaux, writing to William, Abbot of St. Thierry, asks, "What mean those ridiculous monstrosities in the courts of cloisters; those filthy apes, those fierce lions, those monstrous centaurs, those half-men, those spotted tigers, those fighting soldiers and horn-blowing hunters; many bodies under one head, or many heads on one body; here a serpent's tail attached to a quadruped, there a quadruped's head on a fish; here a beast presenting the fore-parts of a horse, and dragging after it the rear of a goat; there a horned animal with the hind parts of a horse?" It is a question which must have suggested itself to many, when surveying the wealth of imagery on a Norman doorway or the misereres of Beverley, Boston, or Bristol. What does it all mean? How did it get into churches of all places? Where did it come from? To the last question a full answer cannot yet be given; much more investigation and many comparisons must first be made. The second question is answered to a considerable extent, and the first question at length, in Professor Evans's interesting and erudite volume on "Animal Symbolism in Ecclesiastical Architecture."*

This zoological imagery unquestionably mounts back to an immense antiquity. Some of it has been imported, almost unaltered, direct from the primitive myths of the Egyptians, on whose sepulchral monuments the Supreme Judge is seen determining the worth of souls by weight, and condemning each, in accordance with the theory of metempsychosis, to be re-embodied in the animal form for which it has fitted itself by its manner of life in its previous existence. In Christian art the Archangel Michael and Satan are usually the protagonists in the scene; but at Autun and Saint Lô the scales are held by the hand of God reaching out of the clouds. At Bourges Satan is trying to cheat; he has put his foot in the scale, while one of his imps is pulling at it from below. In Egypt again was celebrated on the 23rd of April the slaying of

Fig. 1. Weighing Souls (Bourges Cathedral).

Seth-Typhon, a personification of the desert-demon, drought, sterility, famine and death, by Horus, the vivifying and fertilising principle. Bas-reliefs in the Louvre and the British Museum depict the god as a mounted warrior thrusting his spear into the neck of a crocodile. The myth spread to Syria and Asia Minor, whence the Crusaders obtained it, and adopted St. George as their patron against the Mussulman's dragon. The crocodile has become a dragon; but on one of the two famous columns in the Piazetta of St. Mark's, Venice, may be seen St. Theodore and a crocodile.

Nor are there wanting survivals of a form of religion of an antiquity perhaps equally remote, that of sun-worship. Christmas, Epiphany, Easter, Whitsuntide, the Midsummer Feast of St. John, are all survivals of a solar or stellar cult. Most of all does this come out in the legend of the Phœnix. She lives in a far-away Arcadia in the East till five hundred years are overpast, when she flies to Heliopolis in Egypt, and burns herself upon the high altar in the Temple of the Sun. When the priest comes on the next day to offer sacrifice, he removes the ashes from the altar, and finds therein a small worm of exceedingly sweet odour, which in three days develops into a young bird; on the fourth, in full size and plumage, she greets the priest with reverence, and returns to her home. In Jewish writings the Phœnix is often mentioned. On Roman cinerary urns, with peculiar appropriateness when the body had been cremated, she is often sculptured with the inscription "Dis Manibus." Thence the bird passes to the sarcophagi, and the mosaics both of Rome and Byzantium; for, as Lactantius writes, "she has gained eternal life by the boon and blessing of death." Finally, as Phœnix is Greek both for the bird and for the date-palm, the latter becomes, by a diseased etymology, a sacred tree. St. Jerome and the Septuagint translate a passage from Job, "I shall die in my nest, and shall multiply my days like a date-palm." Hence the palm-trees on the sarcophagus of St. Apollinare in Classe, Ravenna.

Fig. 2. The Phœnix.

A far more important source of Christian symbolism is to be found, as was to be expected, in classical mythology. In the early days of Christianity there was naturally much "accommodation." Deities and rites which could not be expelled forthwith were Christianised—coated over with an allegorical import. An especial favourite was Orpheus, from his descent into Hell to rescue imprisoned Eurydice. Even Bacchus and all his train are pressed into Christian service; for Christ was the vine, and the Church a vineyard. In the mosaics of the tomb of Constantine's daughter at Rome is a charming representation of the vintage, with little Pagan genii treading the grapes. Amor and Psyche are taken as emblems of the love of God and the human soul; the golden apples guarded by a dragon in the garden of the Hesperides typify the tree of knowledge in the Garden of Eden; Mercury, or Hermes, is not only the conductor of souls, but, with a ram on his shoulder, represents the Good Shepherd. The Sibyls become Christian prophetesses on Giotto's tower, and the bronze gates of Ghiberti in Florence, and on the pavement of Siena Cathedral; Virgil's Fourth Eclogue takes its place in Christian sculptures. Theseus and the Minotaur typify David and Goliath; Pyramus and Thisbe find their way into Bâle Cathedral, one does not quite see how. The peacock of Juno, and of the Roman empresses, becomes the favourite Byzantine symbol of immortality; for, says St. Augustine: "Quis nisi Deus dedit carni pavonis mortui ne putresceret?" Ulysses sailing past the Isle of the Sirens becomes the ship of the Church, with the ears of its crew stopped to

* "Animal Symbolism in Ecclesiastical Architecture. By E. P. Evans. (Heinemann. 1896.)

the temptations of the flesh. The centaurs, like most of the ecclesiastical monsters, enter into heraldry also. They are usually armed with bow and arrow, and are annoying the believer with "the fiery darts of the wicked." This sagittary appears in the arms of King Stephen, and may serve to date the font of West Rounton and the chancel-arch of the little church of Adel. In all cases the centaur is a personification of unbridled animal impulses and passions.

More ancient, however, than classical mythology, even than sun worship and Egyptian eschatology, is the piteous deprecatory beast worship, a survival of that hard time when prehistoric man, equipped not yet with axe of iron or bronze, perhaps unprovided yet with weapon of rude or polished stone, cowered before the beasts of the forest, terrified at the monstrous dimensions of the elephant and the mammoth, shuddering at the appalling night howls of the hyena, the lion's tremendous roar, the ravening fang of the boar, the gleaming eye of the bear, filled with an uncanny awe and a superstitious dread of provoking the enmity even of the ape, the hare and the fox. The woods were full of horrors to him, mysterious and malignant creatures capable of inflicting injury by occult and magical influences, and therefore not to be irritated or enraged in any way; not to be named, but addressed as broad-brow, flash-eye, forest-brother. Wild stories were invented, circulated, perpetuated. This went on for ages. Aristotle stands out alone, a scientific naturalist 2,000 years ahead of his times. What the mediæval mind thought of Aristotle may be gathered from the veracious "Lay of Aristotle" represented in many a cloister, where the grave philosopher is perambulating the lawn on all fours, with a lady mounted on his back.

Fig. 4. *The "Lay of Aristotle" (St. Jean, Lyons).*

The Greek writers, Ctesias and Megasthenes, on the other hand, and the Roman Pliny, recorded every zoological marvel they could hear of. From one source or other, the early Christian zoologist had a plentiful stock of material. The Talmud had declared that "he who interprets the sculpture literally is a liar and a blasphemer." Philo of Alexandria, half Jew, half Hellenist, had given an esoteric treatment to the Mosaic records. Origen recognised in the Scriptures a threefold sense, literal, moral, and spiritual. What was true of the Bible narrative generally was true of the Bible animals; they were moral beasts; and what was true of them was true of animals in general, and of plants, too. When Solomon spake of all trees, and of beasts and fowl and fishes, he did not write botanical treatises, but moralities. And what was true of genuine, was true of imaginary creatures also; else the believer must have rejected the apocalyptic monsters of St. John

Fig. 3.—*The Sirens* (*Psalter of Isabella of France*).

the Divine. All this was justified by such sayings as that of Job: "Ask the beast and it shall teach thee; and the birds of heaven, and they will tell thee." Gradually all this crystallised into a collection of some fifty moral beasts, called The Physiologus; *i.e.*, The Naturalist; or sometimes the Book of Beasts, or the Bestiary. The Physiologus is at least as early as the fifth century, and was translated into Latin, Ethiopic, Arabic, Armenian, Syriac, Anglo-Saxon, and all the principal Germanic and Romance languages. Probably no book was so popular in the Middle Ages. And, unlike most literature, it was translated into dialect, and thus became everywhere the possession of the common people. Everybody knew the moral beasts; and a representation of one of them on a capital or a bench end; a reference to another, in a sermon or a song, was caught up at once, and relished by man, woman, and child. That is why mediæval architecture, especially in the eleventh and twelfth centuries, teems with zoological sculpture, to us a mystery and often an offence, but once a lesson understood and appreciated of all the common people.

Here are a few specimens of the Physiologus. It is the nature of the lion to howl over the newborn cubs for three days till the tremendous roar awakes them to life. "So Christ on the third day was raised from the dead." It is also the nature of the lion, though it is not generally known, to sleep with his eyes open. "So our Lord slept with his body on the Cross, but awoke at the right hand of the Father." Hence a brace of lions is often seen in front of Italian or German churches, or mounted on pedestals, as wakeful guardians of the sanctuary. A survival of this idea is found by some in the Landseer lions of Trafalgar-square. But as the devil walketh about as a roaring lion, seeking whom he may devour, the lion is also a symbol of evil; and when the whole weight of a porch or a pulpit is placed on his back, as at Pisa and Siena, it is plain that he typifies Satan not merely subdued, but pressed into the service of Christianity. The unicorn can be captured by one method only, which may be seen in Boston church, viz., by decking a virgin with beautiful ornaments and seating her in a solitary part of the forest; when the unicorn runs up, lays his head on her lap and falls asleep; then the hunters come up and catch him. So Christ "has raised up a horn of salvation for us;" the mighty ones of the world were unable to lay hold of Him, until He abode in the womb of the Virgin Mary.

Fig 5.—*Hunting the Unicorn* (*Old German Engraving*).

The existence of the animal was authenticated by numerous horns, fabricated from the tusks of the narwhal, just as the griffin's claws shown in the churches of Hildesheim, Cologne, and Gran are nothing but horns of the Caffrarian buffalo. The elephant cannot bend its knees. Hunters saw the tree almost asunder against which the beast leans at night; the elephant falls and cannot rise. So Adam "fell through a tree." This peculiarity of the elephant finds a parallel in Julius Cæsar's description of the Gallic elk. Elephant and howdah are seen in a Beverley miserere. The eagle can gaze at the bright sun without blinking, and carries the eaglets on its wings upwards and compels them to look on the shining orb; those who can do so with steadfast eyes it rears; but lets the others fall to the ground. So none can behold the face of God but Christ and his elect. This scene is portrayed at Alne, in Forfarshire and Worcestershire, Capua and Lyons. The whale remains stationary on the surface of the water till his back is covered with mould, in which large forests grow. Mariners land, cook their dinner as on an isle, and in a moment are engulfed. The whale is the devil. For the moral stories of the remora, the pelican, the panther, the otter, the beaver, the partridge, the charadrius, and the rest of this strange menagerie, the reader must refer to Professor Evans's entertaining pages. Incredible, now-a-days, the state of mind may seem which invented or believed such a farrago of nonsense; but it had the support of Clement of Alexandria, Augustine, Origen, Chrysostom, Jerome, Isidorus; whose test of evidence can have been none but that of Tertullian, "Credo quia absurdum."

As we have seen, the Physiologus was the great source of eleventh and twelfth century imagery. Later on another monstrous pack of animals, apes, pigs, asses, goats, rushed into the sacred building. The Physiologus was not the only source of zoological instruction. In the thirteenth and fourteenth centuries the same treatment was applied to the immensely popular romance of Reynard the Fox, and other beast ethics. But the object of the artist was different. Hitherto it had been to instruct, to preach, to edify, to present scriptural truth in concrete form, intelligible to those who could not read. Now, the object was not so much to edify, as to satirise and ridicule. Carving and sculpture became weapons of offence, wielded by Christian against Christian. Monks hated friars, and despised the secular clergy, our parish priests; the parish priests owed the loss of the great tithes of many of their churches

to the monks, and of marriage and confessional fees to the friars, who undersold them: the parish priest hated monk and friar alike. So in the misereres of Beverley Minster, the clergy, who there were secular canons, depicted the Black Friars and Grey Friars, who were very active in the town about 1520, and were about as popular with the clergy as the Salvation Army is now, as foxes with friars' habits. The authorities of St. Mary's Church, in the same town, reserve their satire for the Cistercian Monks, having probably suffered from the near neighbourhood of the Abbey of Meaux. Here there are foxes at a lectern reading the lessons; foxes with crosiers, each with a goose in his hood; and a man riding a goat with a rabbit under his arm, a suggestive reference to monastic immorality. Nor was the new weapon confined to the broad field of ecclesiastical humbug in its very numerous varieties. That huge humbug, the mediæval doctor, finds his right place in the carvings. The profession of minstrel also, once so honourable, seems to have sunk into the deepest disrepute; pigs and dogs and cats and asses play fiddles, harps, lutes, and organs. The coarseness and obscenity of many of these later representations, even in the misereres or cloisters of a nunnery, is indescribable. But perhaps the harm of it has been overstated. It is quite a modern fashion to call a spade some other name.

Another source of animal symbolism in later times is to be found in travellers' tales, especially of monstrous births. Hence the legend of that extraordinary freak of nature, the Papal ass; hence also the sea-bishop caught in the Baltic, A.D. 1453, and the monk-calf, born A.D. 1522. Another source is to be found in fables and popular proverbs—the fox and the crane, the cat waiting for the mice to put a bell on it, a man shearing swine, and the like.

From one source or other, every bird and beast that did exist and did not exist found its way into the church. "First they took possession of the chancel, the chapels, and the pulpit, and finally overran the whole building, nestling in capitals, creeping along cornices, squatting on balustrades, peeping out of illuminated windows, peering over portals, grimacing as gargoyles from the roof." Every reader, layman or cleric, architect or archæologist, will find instruction and entertainment in the glimpse which Professor Evans has given us of that strange, far-off, mediæval world.

EXPERT EVIDENCE.

IN a recent number of the *Builder* a letter of a correspondent was published which criticised adversely some evidence which was given by an expert in a law suit, of which our correspondent was a spectator. There is, no doubt, a popular dislike of what is called expert evidence. This arises very largely from the wide difference between expert opinion in the valuation of properties for the purpose of compensation, or in regard to the assessment of damages. To a large extent experts have only themselves to thank for this state of the public mind. It may, perhaps, therefore be desirable to consider what should be the frame of mind which an expert, whether architect or surveyor, should take up when he is called on by a person who is at variance with another. In one word, he should look at the matter judicially. He is called in as a person having a special knowledge of a subject, with the object of giving as nearly as he can a true opinion.

Now, we make no doubt that among high-class practitioners this is the frame of mind in which the question is approached in the first instance. But in most cases also it is equally certain that when the matter gets into the Law Courts this frame of mind is changed. It is a well-known practice among bankers to keep new coin for those who have to pay legacy duty at Somerset House; and, in like manner, surveyors, when they put on the character of witnesses, take up the opinions of partisans. This is altogether wrong, and it largely tends to deprive expert evidence of its value and to make it much more expensive and, consequently, adds to the cost of litigation. For it is clear that if one expert differs widely from another he must be supported by further evidence if his testimony is to carry weight. The result is that when lands and houses have to be valued by a jury or an arbitrator it is constantly the practice to call three or four experts on each side, each of whom supports the contention of the side to which he is attached. A house cannot be truly worth both 5,000*l.* and 10,000*l.*, and this is the kind of radical difference which is constantly witnessed. It is obvious that if six men assert their opinion that a property is worth the former sum, and six others assert that it is worth the latter, the frame of mind which permits of this difference is not judicial. The result, of course, is that persons whose duty it is to decide what is the true sum, in nine cases out of ten regard each opinion not as a true one, but as indicative of a figure either greater or less than the person who states it expects the property to fetch. This has become a system, with the result that the public have fallen into a frame of mind which regards the assertions of experts as wholly untrue, and that judges and arbitrators are led to regard the evidence of experts with great suspicion.

This is not a satisfactory thing for professional men, who, when they give evidence in a court of law or in the room of an arbitrator, should be regarded as persons who come to give testimony which may be thoroughly relied upon. We fear that, so far as the valuation of buildings and property goes, the present practice of giving what may be termed partisan valuations has become so fixed that it can hardly be given up without danger to the interests of land and house owners. Because, if a surveyor were now to come and state a figure something near the true one, the jury or body who have to give a final verdict would not regard it from the right point of view, but would proceed to discount it in the usual manner. But in other matters experts may very well adopt throughout a dispute a more judicial attitude. Thus in questions which relate to the interference with light, it has not been unusual to see dismal pictures of the results of a new building on the light of an old one put forward by those who are acting on behalf of the dominant owner. On the other hand, the way in which the height of buildings is minimised is also equally misleading. This is not as it should be, and those who are called on in this class of disputes can, and should, endeavour to prevent themselves from becoming partisans. It is not an unusual thing for us to receive reports of light and air cases in which it is stated that Mr. A. B., architect, appeared for one side, and Mr. C. D. for the other, as if they were counsel or solicitor. This shows the kind of non-judicial frame of mind in which these disputes are too often approached, and which too often also results in costly litigation instead of in a reasonable and business-like compromise.

There is also some misapprehension in light and air cases in regard to the value of expert evidence. A surveyor is not a better judge of a pure matter of fact than is any other intelligent person. But it is to be noticed that in this class of law suit, architects and surveyors are often asked to testify to matters of fact with a view to the judge regarding their evidence as that of experts, when in truth they do no more than state actual facts. If, for example, the light to a jeweller's shop window be interfered with, the jeweller or persons in this kind of business are experts in regard to the effect of the alleged diminution of light. But an architect or surveyor is only in the same position as any other intelligent man, and it is very undesirable for an architect or surveyor under such circumstances to allow himself to be called as a witness as an expert. In truth, the more careful experts are in allowing themselves to become witnesses, and the more judicial a frame of mind they take up, the better it will be in the long run for all parties.

The above remarks on the subject of expert evidence have been confined as far as possible to its relation to litigation which more immediately interests our readers. But in every profession in which experts are to be found the same faults are observable. In Admiralty litigation, surveyors and ship-brokers are, we believe, found to differ widely and absurdly in regard to the value of ships, and any official connected with the legal department of the large railway companies can give any amount of instances of extraordinary differences of opinion among medical men as to the possibility of the ultimate recovery of persons injured in railway accidents. It must not, therefore, be supposed that architects and surveyors are in this respect different from experts of other professions.

NOTES.

The London Water Question. THE manner in which the Government deal with the water question is deplorable. It has been announced in the House of Commons that the Government are about to appoint a Royal Commission to investigate more especially areas and terms of purchase. If there was to be a Royal Commission, why was it not appointed at the beginning of last session, when it might long ago have been at work? But we cannot see that a Royal Commission is required. What is needed is adhesion by the Government to one of two lines of policy, either to create a special body to manage the water-supply of London, or to hand it over to the County Council. If there is difficulty about the extent of the central area, that is a matter to be settled by the Cabinet. It is not a question for a Royal Commission, which is needed to

collect facts. The actual state of matters in regard to the water question is thoroughly known, and we can only regard the appointment of a Royal Commission as a weak and useless device to postpone the taking in hand of a troublesome question.

Completion of South Kensington Museum.

IT is as well that our Government, who are for letting the South Kensington Museum buildings remain in their present discreditable condition, apparently, for an indefinite period, should be aware that they are making themselves an object of derision in other countries where national buildings are considered a matter of some importance. The *Central Blatt der Bau-verwaltung*, in a recent issue, speaks contemptuously of the manner in which the completion of our Museum buildings has been put on one side time after time, without even the slightest promise of attention to it, and expresses the opinion (probably quite correctly) that such a procedure would be impossible in any Continental capital.

National Monument, Berlin.

ONE of the principal events in connexion with the ceremonies being held at Berlin this week will be the unveiling of the equestrian statue to the Emperor William I. which forms the central feature of the "National Monument" erected opposite the Royal Castle, and to which we have frequently referred. The monument is now nearly completed, the equestrian statue, the principal side figures, and the colonnade being in position, and there is only the bas-reliefs in connexion with this colonnade wanting. The monument figures as a national memorial, and yet it is difficult to imagine a more unpopular piece of work, quite independent of its merits as a work of art. The public did not wish for a small equestrian statue opposite the Castle, by which it is dwarfed, and where it was backed by the river Spree with its unsightly barge traffic. What they wanted was a pantheon in the "Thiergarten," and both the general public and artists would have welcomed even a modification of that scheme. The memorial embodies only the wishes of the present Emperor, and no doubt affords a better outlook from his Castle than the old buildings which have been destroyed to make room for it.

The Paris Exhibition.

THE managing body of the Paris Exhibition for 1900 is about to open a competition for the best form and construction for the circular railway which is to connect the various portions of the Exhibition. In addition to this general line of railway communication, there is to be a special railway track laid down for experiments in various methods of traction. These may prove of considerable interest.

St. George's, Bloomsbury.

THE fact, recorded in our "General Building News" column, that it has been found necessary to call a meeting, and consider the means of acquiring funds for the repair of the stonework and the roof, and also that it is proposed at the same time to decorate the interior of this church, may well be considered a matter of interest beyond the limits of the parish. The church is one of the three that we have by Wren's pupil Hawksmoor, and one of the fifty churches built under the provisions of the special Act passed in Queen Anne's reign. Most persons outside the architectural profession are not aware that the peculiar design of the tower was an attempt, though an erroneous one, to realise the design of the Mausoleum of Halicarnassus. The bad condition of the stonework has in fact been painfully apparent for some time, and we may well ask how it came to be so long neglected by the parish authorities. We may add that those in charge of the fabric should be careful what kind of decorator they admit into it. A work of this kind should not be undertaken but with the advice of some eminent architect well skilled in classic architecture. The church will clearly lend itself to a decorative scheme of the highest order.

Proposed Drainage By-law for London.

THE Medical Officer and Surveyor of the St. James's (Westminster) Vestry have jointly reported on the proposed new by-laws in regard to drainage proposed by the London County Council, and make some good suggestions, especially in regard to the simplification of clauses, as may be seen by the following examples:—

CLAUSES AS DRAFTED.	PROPOSED SUBSTITUTION.
2.—Every person who shall erect a new building, and shall provide, in connexion with such building, a pipe or channel for the purpose of conveying to any sewer any water that may fall on the roof, shall cause such pipe or channel to discharge over a properly trapped gully or into such gully above the level of the water in the trap thereof.	2.—Rain water shall be discharged over or into a properly trapped gully so that sewer air shall not ascend into any rain water pipe.
He shall not cause any such pipe or channel to be so constructed as to receive into such pipe or channel any solid or liquid matter from any water-closet, urinal, slop or other sink, bath, or lavatory.	No rain water pipe shall receive any urinary or fœculent matter.

The tendency to voluminous wording in documents of this kind is increasing, and increases the difficulty on the part of the average householder in finding out what he is really required to do. As to the second quotation the St. James's Vestry Report objects, as we did, that to prohibit waste-water from baths, lavatories, and sinks discharging into rain water heads would be "oppressive and unnecessary." There are some other conditions also, as we have already pointed out, which are somewhat excessive. But the objections raised to the proposed By-laws in general seem to take rather too much the form of a complaint against the extra trouble and expense they will involve, an argument which we do not think is much to the purpose where the provisions are salutary in themselves.

The Public Gardens Association.

THE Report of this Association for the year 1896 gives, as usual, a record of their successful work in the way of securing open spaces for the public, or laying out and improving them after they have been acquired. The Association, among other good works, contributed 1,000*l.* towards the formation of the recreation ground on Battersea Wharf, and have laid out, or contributed largely towards the laying out, of several other places of public recreation, chiefly formed out of disused burial grounds. This year the Association accompany their Report with an extra circular announcing the appointment of a Committee to provide for the formation or securing of public parks and open spaces in connexion with provincial towns, as a commemoration of the Queen's reign.

Risks Run by Electrical Workmen.

THE mysterious accident by which a labourer employed by the Hampstead Vestry lost his life when cleaning out a transformer substation, shows that it is impossible to take too great precautions when dealing with high electrical pressures. It was only recently that the Board of Trade insisted that the cases of the transformers should be put in direct connexion with the earth. When this was done, one would have thought that it would be perfectly safe to step on the case. What the accident proves, however, is that the resistance of the man's body, for some reason or other, was comparable to the resistance of the wire path to earth. As he was holding the ladder with damp hands, and making good contact with the transformer case with a damp boot, no very high difference of potential would have been required to give a fatal shock. The case having come into connexion with the high potential main, a considerable current must have been flowing along the earth wire, heating it and drying the soil round it, hence this path might well offer a, comparatively speaking, large resistance to the electric current. We shall be interested to know what plan the Board of Trade will adopt to make the recurrence of such an accident impossible. Mr. S. Z. de Ferranti, whose experience with high pressures is second to none, has advocated for some time the necessity of having a cover to the transformer substation which, when lifted, automatically cuts off the high tension. As in Hampstead alone there are twenty-four of these substations, and water has often to be syphoned out of them, we think that the Board of Trade ought to insist on these covers being adopted.

The Parish Church, Chatham.

IT is announced that Sir Arthur Blomfield has prepared the plans for a massive tower to be built at the south-west end of St. Mary's, Chatham, as part of a scheme of complete restoration, at an estimated cost of 8,000*l.* With the exception of the chancel and side chapel, which were rebuilt eight years ago in the Early English style, after the same architect's designs, the present structure consists for the most part of the rebuilding in 1788, but it still retains some features of the original church. St. Mary's, standing on the chalk cliff, above the Ordnance Wharf and Old Dock, formerly appertained to, and was served by, the Black Canons of SS. Mary and Nicholas Priory at Leeds, near Maidstone, upon whom it had been bestowed by their founder, Robert de Crevecœur, or Crouchheart, *temp.* Henry I.* At the Suppression the King gave it to the Dean and Chapter of Rochester. The first church was destroyed by fire and rebuilt 1316-20; in 1635 the Navy Commissioners repaired the fabric, reconstructed and enlarged the west end, and erected a small western tower. In 1689 Benjamin Ruffhead, anchor-smith, gave some branch and other ironwork. In pulling down the old chancel there were found, amongst materials that had been used for filling the east window, some finely-sculptured fragments, one of them being a mutilated figure of the Virgin and Child,

* For Leeds, and the Crevecœurs, see "A.A. Vacation Visits," *Builder*, August 3, 1889.

supposed to be that of Our Lady of Chatham, of which Lambard gives a curious account in his "Perambulation of Kent." In St. Mary's was set up an inscription in memory of Steven Borough, *obiit* 1584, the Arctic explorer, to whom is credited the discovery of the passage to Archangel.

Eastgate House, Rochester.

THE Rochester Town Council have agreed to acquire, for the purposes of a museum and public library as a memorial of the Queen's reign, this highly interesting relic of the old city. Eastgate House—the "Nun's House" of Dickens's unfinished "Mystery of Edwin Drood"—stands in the High-street, near the site of the East Gate of the wall, and Williamson's school erected on the filling-up of the ditch. Constructed of timber and stucco, it is remarkable for the irregularity of its outline and plan, and for the fine wooden chimney-pieces, carved woodwork, and enriched ceilings within. On a beam in one of the principal rooms is cut "1691;" the house, though, is believed to be of an earlier date. The six-sided turret staircase has a projecting saddle-back roof, in strange contrast with the roof of the adjacent hexagonal bay which almost conceals the gable behind it.

M. Bartholdi as Architect.

IT appears that M. Bartholdi, the sculptor (if one can use the word in this case) of the colossal "Liberty" at the entrance of New York Harbour, and also of the rather mediocre monument to Gambetta at Ville d'Avray, claims also to be the real author of the design of the Palais de Longchamp at Marseilles, of which M. Espérandieu is the reputed architect, and has incited the Société des Artistes Français to address a remonstrance to the authorities at Marseilles in regard to the omission of any mention of M. Bartholdi's share in the work. M. Allar, the Mayor of Marseilles, repudiates the claim energetically, declaring that he is in possession of documents which constitute a full answer to M. Bartholdi's unfounded pretensions, in which for our own part we certainly have very little faith. M. Bartholdi is an artist who has always shown a great anxiety to keep himself in evidence.

The Institute of Water-Colours.

THE eightieth exhibition of this Institute, at the Gallery in Piccadilly, contains some very charming works, which however must be looked for mostly among the smaller and less conspicuous drawings. The President, however, has made a real success with his "Jessica" (165), not only a most beautiful face but one which really looks the character, though his Shylock is a respectable old nonentity. His larger figure, "Rosalind" (345) is a beautiful piece of colour and costume, arranged on a figure which is certainly not Shakespeare's heroine. A new architectural artist of high talent appears in the Honorary member, Count Seckendorff, whose drawings of Roman remains, the "Forum" (44) especially, are admirable. Mr. Fulleylove is hardly at his best in his large view of Athens (365), which is interesting rather in a topographical than artistic sense. There is much humour in Mr. Dollman's "Dogma" (175), spoiled by the disagreeable woolly texture of some of the faces. After these, the main interest of the exhibition lies in the landscapes. Mr. Joseph Knight sends a large work, "O'er Moor and Fell" (257), one of the finest specimens of a manner from which he never departs, but in which, within its limits, he is always successful. Among smaller works which must be looked for, but which are worth looking for, are Mr. John White's "Village Street, Branscombe" (157), Mr. Max Ludby's "Close of Day" (154), with a grand warm-coloured cloud resting on the horizon; Mr. C. E. Johnson's "Break of Day" (140), Mr. Colman's "Tender Light of Afternoon" (96) and two beautifully refined little landscapes by Miss Squire (91 and 97). Mr. Alfred Parsons' bright and brilliant view of old "Warley Place" in the midst of its garden (67) is among the more prominent works, as also Mr. Wimperis's "High Down, Dartmoor" (161), also Mr. Austen Brown's "Ste. Geneviève" (234) a picture evidently painted under French inspiration and training; Mr. W. Rainey's children dancing in a field, under the title "A Ring of Roses" (292); Mr. Bernard Evans's "Fountains Abbey" (327), a large and rather too solid drawing, but with a certain power; and Mr. Weedon's "Hayfield, Pulborough" (373), a work in a broad style and with a very fine sky. The West Gallery is occupied with older works, "Royal Institute Art Union Prizes," including some good examples of Prout, and some not very remarkable ones of Varley, Holland, and some other old names. The two best things in this part of the collection are Mr. Wimperis's "Arundel Castle" (78) and Mr. Harrison's exceedingly beautiful and real coast scene under the title "The Rising Moon" (103), which could hardly be surpassed in its way.

The Goupil Gallery.

AT the Goupil Gallery is a collection of landscapes by James Maris, one of those modern Dutch painters with whom landscape painting is not so much a representation of nature as a representation of one special type of effect which they read into nature, and to which they always adhere. The deadness and coldness of colour in the land portion of his works is almost depressing; on the other hand his skies are often very fine, and rendered in a manner entirely his own. The large painting entitled "Seaweed Harvest," a narrow strip of beach with a great mass of clouds above it, is splendid; and some of the smaller works are very interesting, though the impression of the whole collection is rather monotonous.

THE ADVANCEMENT OF ARCHITECTURE:*

IN my last lecture I pointed out how the Gothic architects dealt with one new feature, viz., the flying buttress, how it was at first a plain piece of structural work, and how it was gradually brought into an ornamental feature. This was more or less the case with every new feature. The Early Gothic window was a plain lancet. Sometimes three were grouped together—of course, for light, the two side ones being lower; when there were two together they were both embraced by one arch, doubtless for good structural reasons, and, as light was the object, a circular opening was made in the spandrel over the central shaft, which practically became a mullion, and this circular opening was mostly adorned with a trefoil or a quatrefoil. The columns were gradually diminished as much as possible, and the heads were eventually filled with geometric tracery. We know in our own English Gothic that this was called the Geometrical period.

It is curious, with all the desire for novelty that characterised the whole Gothic period, how conservative the architects were; they never substituted a new form for an old one until the old one interfered with the proper development of their new aim. The original divisions of the windows were shafts, made slenderer and slenderer, until at length they were superseded by the plain moulded bars we call mullions, which were continued and bent into tracery. It was by development rather than by anything absolutely new that the astonishing results of the latest phase were obtained; for instance, the gables of porches or doorways were made higher and higher, until they ran above the central rose window of the west end, and were pierced to admit light. At Amiens the finial of the flat gable of the central porch only runs up a little above the string of the ground story, though it is raised by the figure of an angel blowing a trumpet. At Reims, the high-pointed gable is surmounted by a finial with a cross on the top, just level with the centre circle of the great west rose window. At St. Wulfrand the thin point and finial run high up into the west window. At the Cathedral of Rouen the gable, as seen in perspective, cuts the great rose window in two, and its finial reaches on to the upper archivolt above the circular rose. At Notre Dame de l'Epine, as seen in perspective, the tops of the two finials of the gables run above the crowning string on to the battlements.

The buttresses were originally merely structural, to resist thrusts or to stiffen walls, with plain sets off and water tables. As the architects got more and more skilled in construction, they seemed to have developed a stronger taste for ornate structures; you may be sure that this was appreciated, and was more and more wanted. You must remember that though architecture had passed from the hands of the clergy into the hands of the laity, the clergy had not lost their taste for it, but had only seen themselves surpassed by superior talent and skill, and besides as the people were getting richer and more fastidious as soon as they were organised into trade guilds, the clergy must have heard of their appreciation of more ornate buildings. At the Cathedral of Notre Dame at Paris, the buttresses were still plain, but in the west front the architect had put an ornamental note in each, by means of a niche with a statue, the niche being made by two projecting columns covered by a roof. The architect, too, had carried the arcade of Kings across each buttress and done the same in the upper arcade At Amiens, owing to the projection of the porches, the lower stories of the buttresses were brought forward too, they were arcaded on the face and at the level of the string of the ground floor octagonal spires were put on them and angle pinnacles. At Reims the portals came in front of the buttresses, and the face of the buttress above the portal was arcaded with a triple arcade to the level of the first floor string; above that an œdicule for a statue was formed by an arch on two columns and was capped with a spire and pinnacles as at Amiens, and like them the spires ran up into the gallery of Kings, the finials reaching to the top of the pedestals on which the kings stand. At St. Wulfrand the buttresses project considerably before the jambs of the portals and are square for a certain height, and then are set anglewise and are hollowed into niches on both the diagonal faces, and have statues with canopies over them, whose spires are tufted with crockets; above the canopy is a gable with a tufted finial bearing on its top the stand for another statue with a canopy over it, the finial of which runs up and divides the angle buttress which is gabled, and the spire over this dies against the square face of the buttress above, about the level of the middle of the rose tracery of the west window. The same sort of buttresses, but even more elaborate, projects in front of the portals at Rouen. In late French Gothic the canopies form an important ornamental feature.

The only other things I know that make up the sum total of the external architectural ornamentation are the pierced balustrades. I may here point out a motive at Rouen Cathedral I never noticed elsewhere, that the balustrade to the highest open gallery has its top line diversified by each alternate space of the arcade being formed into a canopy, this is very like the semi-octagon projection in the window lattices at Cairo, used for keeping the water bottle cool. I never was in the gallery at

* Being the sixth and concluding Royal Academy Lecture on Architecture this session. Delivered on the 11th ult. by Professor Aitchison, A.R.A.

Rouen, and so can only speak of its appearance from below, but all these new methods of ornamenting show the tendency of first turning necessities into ornament, and then developing and multiplying the ornamental features.

The arcading or panelling of the plain surfaces of stonework, the filling in of gables with tracery, sometimes blind and sometimes pierced, the new mouldings, the modelling of piers and jambs, and the sculpture, and I may add the development of the fringes, like those round the porches at Amiens, end the list. I may say, however, that by making the sides of the arches of the fringes vertical, as is done in late work, gives them a Saracenic look, like the stalactites to the arches of the Alhambra. I have so often adverted to the Gothic mouldings that it is needless to repeat my remarks that they were studied to tell in a misty climate, as the Greek ones were to be effective in a sunny climate. The modelling of piers is the result of the stepped arches and the logical desire of the Romanesque architects to have a separate column to support every separate rib. Not being a sculptor I say nothing of the carved work.

Before the end of the twelfth century the Romanesque sculptors had taken their floral ornament from the leaves, plants, and flowers that were native to the parts where they were building, and evidently copied their figures from the natives, too; but that particular floral ornament we call a crocket became a distinguishing feature of Gothic. You may notice that the old spire at Chartres has no crockets, but in the new one not only the spire, but every pinnacle, is crocketed.

As a rule, the outsides of buildings tell nothing of their internal structure, and I do not mean by that their shapes, for the apses and chevets are striking enough. St. Bacchus at Constantinople, often called the little Sta. Sophia, might, as far as its outside is concerned, be a printing-office or a Dissenting chapel, in spite of its domed inside.

It was the Byzantine custom to utilise the space between the buttresses, as was ultimately done at Notre Dame; but this is not the case in vaulted Gothic structures, as a new principle had been introduced of counteracting thrusts from the inside by the external thrusts of the flying buttress, as, with the exception of the west front and the north and south ends of the transept, every bay of vaulting is shored up outside by flying buttresses. It will, therefore, be best to say something of the vaulting before making the final remarks.

I mentioned the vaults in my last lecture, but it may not be amiss to repeat my remarks. The vault was confined in the first instance to transverse, diagonal, and wall ribs, each pair forming an arch. The ribs at first being merely beaded at the edges, but these were gradually turned into mouldings, and in England smaller ribs, under the name liernes were multiplied, and a ridge rib introduced, possibly to make the filling in easier, and eventually the spaces were so small as to be filled with thin stones, scribed and fitted in. Short ribs, tiercerons, were also inserted, set at an angle to the liernes, forming stars in the middle, the horizontal section of the solid part of the vault being polygonal, with curved faces. Gradually the horizontal section became circular, and the ribs got so small and numerous that it was easier to make the horizontal section of the solid round, and to work the ribs out of the voussoirs, than to use ribs and panels. These were called fan vaults, and are still constructively valuable in brickwork, as they save the waste of time and expense in cutting the groin points, as well as the weakening of the vault. I have used them for basement vaults. These fan vaults were often used with pendants, as at Henry VII.'s Chapel and elsewhere. As construction and as mason's work these fan vaults were most wonderful, but, æsthetically, the monotony of the repetition of arches and cusps is sickening. I have often wondered why this form of vault was not used now, only carved with something interesting, instead of being covered with the everlasting cusps. Of course, at first sight, the stellar vault is striking, and so is the fan vault, and those with pendants are more astonishing still. In fact, to those unacquainted with the method of support, they are marvellous. But interminable repetition is beyond human endurance. Though all the leaves of a tree are, roughly speaking, alike, no two are exactly the same, nor in the same position. The Greeks realised the advantage of this device of nature and acted on the lesson; so that we never tire of looking at the Parthenon.

Now, as before, all the external features of a building are the walls and roof, and the walls are only necessarily pierced by doors and windows. The Greek temples, if Dr. Dörpfeld is right, were alone without windows, and every habitation must at least have one chimney for the cooking-fire, or a hole in the roof for the escape of the smoke. It is a matter of genius as to how these walls and roofs, these windows and doors are to be treated to make the whole building interesting or beautiful. We should be grateful to the Saracens and to the Mediævals for showing us the possibility of making them striking, effective, and beautiful, in a new way, and showing us that every form of beauty was not exhausted by the efforts of their predecessors. Architecture is really the creation of religion. It is much more for pleasing his deity than himself, that man has built all the most famous buildings in the world. As soon as the savages that over-ran the Roman Empire were nominally converted to Christianity, their main object was to have temples built as large, grand, and stable as their wealth and the skill at their command would permit, and when the architects were skilful enough to enable them to show their enthusiasm, lanterns, towers, and spires were added to every abbey, church, or cathedral, and the whole was covered with every form of ornament that they admired.

The Greeks did not, so far as I know, make any improvements in structural art. Their temples, as far as their construction went, were no advance on Stonehenge; but they were a tasteful people, who loved the beautiful, and they made the most perfect temples the world has yet seen, where every artistic touch still tells its tale as well as it did when it was new. The Romans were greater than the Greeks in everything that we call practical. They saw the advantage of the arch, and used it as it never had been used before; they saw the advantages of architecture, and there was no country they conquered and kept that is not enriched with it. They learnt the art of building in rubble—or, if you prefer it, in concrete—faced with stone or burnt brick, so that there was no place they stayed in where the main material was not to their hands. There is in Tunisia an aqueduct, some 70 ft. high in parts, that is built of the soil of the country mixed with lime, and cast into huge blocks; but then they had the taxes of the then civilised world for their revenue, armies of slaves, excellent roads, and the power of requisitioning the population wherever they stayed. They were admirable planners and most excellent builders, and, of course, could choose their architects from the cleverest of all the tributary nations, and they always succeeded in getting dignity and magnificence in their buildings. The Byzantines were Romans, with a larger admixture of Greeks and Orientals, and they perfected the dome on pendentives and invented domes on drums. The Saracens were savages when they emerged from Arabia, but with a passion for literature and some skill in it, they deeply studied Greek philosophy, and Greek and Hindoo, arithmetic and geometry, mathematics, and eventually developed a new style that has captivated mankind by its gorgeous and magical effects. The various savages who overran the Western part of the Roman empire, as soon as they settled down began to practise building and showed an energy, perseverance, a power of observation and logical deduction that has never been surpassed, if it has ever been equalled. In less than a century after the taking of Jerusalem, in 1099 A.D., they became original and daring architects, and eventually the most skilful the world has yet seen, but how any one can suppose that they were not indebted to the Saracens for their methods is beyond my comprehension. The magnificent Norseman showed a passion for the massive and the grand. If you will go from the nave of Southwell or Gloucester into the choir, you go from the grand and gloomy work of giants to the exquisite skill of pigmies. Where did the ideal of all this mysterious elaboration and slightness come from but from the admiration of Saracen work?

I daresay most excellent reasons could be given why the great epochs of architectural art cannot occur again, and particularly in the immediate future; for there is always some good reason to be given for any bad practice; men can say that "so-and-so, with no more knowledge than I, made a comfortable income by keeping an architectural fancy dress shop, and that a few have made their fortunes at it;" but as I addressed you as poets in structure, so I continue.

If we want to imitate the Gothic architects in creating a new style, we must at least learn all that can be learnt, and strive all we can, before we are in a position to say that a new style is impossible.

No one can say that there is no poetry left in this age. I believe no age is absolutely wanting in the elements of poetry, but it may want the man gifted with perfect utterance to make it known and acknowledged.

When I was a student I took in Viollet le Duc's "Dictionary." There is one short remark in it that it will not be amiss to quote:—"The constructors of those days sought without ceasing, and routine had no hold on them; in searching they found, they advanced, and never said 'We have arrived, let us stop here.'" This seems to me to be good teaching to follow. We at present want an architecture of our own time, a new architecture; this is a good wish. But we must know how a new architecture is found. Let us see how it was found in the Middle Ages, and to do this we must begin at the beginning with the Romanesque architects. I did more or less describe their efforts until they found out the pointed arch, the vaulting ribs, and the flying buttresses. They had learnt all they could, they had observed the various strengths and qualities of stone, they had reasoned on every step they took, they had dared and striven, and they had become more or less masters of descriptive geometry, which in itself is a great training to the mind. They had to set out full-sized diagrams on the floor prepared for them, of every piece of work that required accuracy, and to draw out every moulding full size in section; but besides this, they had to get out the forms the mouldings took when the joint came on to a horizontal line, for the masons to cut their templates from. Every piece of stone was completely worked before it was carried up to its place, and the architect had to see that the work was properly executed and bonded, and that the rubble filling was properly put in, or else, especially in high walls, there would sure to be settlements, but this was not all, for until the schools had turned out efficient workmen and foremen in each trade, the architect had to arrange the necessary scaffolding, and draw out all the centring for the arches and ribs, besides having to look after the quarrying of the stone, and its conveyance to the work, and the proper economy in cutting it, and this did not apply to the stone alone, but to every material used, so that the architect was very properly called, "The Master of the Work;" but probably when the communes were constituted and made up of trade guilds in the latter part of the twelfth century, the different trades were well versed in the knowledge of their arts. The bottom half of the circle of the west rose window at Reims, which is 41 ft. in diameter with open spandrels, was no easy task to joint, when there was only one light circle in each corner to support it, and besides its own weight, it had at least half the tracery to carry. The cause of invention or the capacity for the production of æsthetic effect by individuals is impossible to discover, and if it should happen that a new style should come about, we cannot foresee what form it will take, but I think we can say that it will not take the form of Gothic, for ornamental geometry is not the passion of the present day. I think the cultivated would now prefer the Palace at Brescia to anything Gothic. It is doubtful if any new grand style is likely to be developed in the immediate future; for the embodying of any great idea in building is very remote from the thoughts of the present day. The embodiment of every great idea came as naturally to the people of the Middle Ages as sending a letter to the papers comes now, and the Church schools of those days represented all the education that was to be had, technical and other. The clergy were a protection from the arbitrary power of feudal lords, and pointed out the way to Heaven, while the Church offered all the innocent delights that were then known. The exercise of architecture and all the sister arts, as well as the sumptuary ones, offered the most perfect intellectual exercise without fear of the dungeon or the stake; consequently to endow the church with excellence and beauty offered not only the highest but the most cogent motives. All I can now say is this, that before we can hope for a new style, we must acquire the knowledge of construction possessed by the engineers, skill in planning, and the proper dis-

position of light and shade. With this as a foundation we can only hope the poetic inspiration may come to enable us to clothe the necessary forms with an elegance more perfect than the world has yet seen.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS:

HERALDRY IN ENGLISH MEDIÆVAL ARCHITECTURE.

A MEETING of this Institute was held on Monday, at No. 9, Conduit-street, Mr. Aston Webb, Vice-President, in the chair.

The minutes having been taken as read, Mr. W. H. St. John Hope read a paper entitled "Heraldry in English Mediæval Architecture," of which the following is an abstract:—

Mr. St. John Hope said he should confine himself to the historical period beginning with the accession of Henry III., in 1216, and ending with the death of Henry VIII., in 1547. The applications of heraldry to architecture in this period were so numerous that it was not easy to deal with them in any degree of connexion. Arms, badges, crests, and supporters were freely used in every conceivable way, and on every reasonable place. Whether the building were ecclesiastical, domestic, or secular was immaterial: there was no difference in the treatment of the heraldry nor limitation of its use. The earliest applications of armorial insignia were purely of a personal character, to distinguish a man from his fellows when all were alike disguised in their war harness. These insignia usually took the form of a device painted upon the wearer's shield or attached to his headpiece. Heraldry, consequently, is met with first in buildings, in the form of painted or sculptured shields on the monumental effigies of departed warriors. The value of armorial shields as a mode of picture-writing soon suggested itself when heraldry became a science, and the association of them with architecture formed at once a beautiful form of decoration and a speaking historical record. The wall arcades of the nave aisles, and the tombs of Queen Eleanor and William de Valence, in the abbey church of Westminster, furnish the earliest and most charming examples of this combination. Another admirable thirteenth-century example is the gatehouse of Kirkham Priory, Yorkshire. In the new nave of York Minster, of about the same period, various benefactors to the church are commemorated, after the Westminster fashion, by their shields of arms, thirty-two in all, sculptured, two to a bay, in the spandrels of the pier arches. A somewhat similar arrangement occurs at St. Albans in the beautiful decorated bays of the nave, built after the partial fall of the south side in 1323. In the north of England there were numerous fourteenth-century buildings showing heraldic decoration with the architecture—for instance, Bothal Castle, Alnwick Castle, Hilton Castle, co. Durham, Lumley Castle, the Lion Tower at Warkworth, and Micklegate Bar, York. The presbytery and choir of York Minster contain in the spandrels of the pier arches a series of sculptured shields similar to those in the nave, and the great arches of the central lantern tower are also adorned with large and fine examples of the sculptured shields of arms of the builders and others. Taken as a whole, the fourteenth century, except perhaps in Yorkshire, was not very prolific in buildings decorated with heraldry; but it produced a magnificent series of monuments, many of so elaborate a character as to form distinct features of the churches wherein they stand. The more notable examples were enumerated and illustrated by the author of the paper. The so-called Perpendicular style was very prolific in heraldic ornament and decoration, which was especially seen in East Anglia, where almost every large church of the period is lavishly decorated with heraldry. Several examples were described. Fine displays of heraldry existed in many of the ornate fireplaces of the fifteenth century, notably at Tattershall, in Lincolnshire, and the Bishop's palace at Exeter. The fifteenth century, like the fourteenth, was rich in heraldic monuments, and brought into fashion those beautiful stone structures that combine the monument with the chantry chapel, of which examples exist at Tewkesbury, St. Albans, Salisbury, Winchester, and elsewhere, one of the finest in design, as it is most remarkable in construction, being the bridge-like structure in Westminster Abbey church, in memory of Henry V., whose tomb stands beneath it. Much of the architectural heraldry of the first part of the sixteenth century is simply a continuation of that which preceded it. In large and costly buildings, however, the increased richness of the architecture was accompanied by a corresponding outburst of heraldic display, as in Henry VII.'s Chapel at Westminster (in particular the bronze doors), King's College Chapel, Cambridge; St. George's Chapel, Windsor; and Hampton Court. Selecting a few typical architectural features, such as spandrels, bosses of vaults, &c., Mr. Hope proceeded to show the influence the introduction of heraldry had had upon their ultimate development, citing numerous existing examples. In conclusion, the author discussed, by the light of mediæval examples, the artistic treatment of heraldry in its application to architecture, shields, crests, supporters, and various other features being dealt with in detail. The lecture was illustrated by a large number of lantern slides and coloured photographs of stall-plates of Knights of the Order of the Garter in St. George's Chapel at Windsor.

Mr. J. A. Gotch, in proposing a vote of thanks to the lecturer, said that he had been much struck with the very interesting series of views which had been thrown upon the screen by Mr. Hope. The later examples exhibited had pleased him, on the whole, more than the earlier ones. That was largely due to looking at the subject from the decorative point of view. Of course, the earlier heraldry, the more heraldic it was, in a certain sense—that was to say, the nearer the stream was to its fount the purer it was. The older the shields and devices were the simpler they were, but for pure interest of design, as apart from merely stating the fact, it seemed to him that some of the shields of a later period struck him as being most beautiful and most ingenious. There were not only the heraldic facts portrayed, but it was done in such a very charming way, and they had not only the alliances and interesting history given, but the actual skill and ingenuity of the designer, and the evident love with which he did his work, displayed before them. So with that tomb in Henry VII.'s chapel. He did not think that of all the illustrations thrown upon the screen there was any more charming example than that of the arms of England in bronze work. A more elegant supporter than that greyhound he did not think one could ever see, and the elegant way in which the arms were displayed, with the whole of the field voided, was most ingenious, because of course, as a rule in drawing heraldry, the various badges were drawn entirely separate; but in order to have them supported when in the shield; all these things had to be shown, and the ingenious way in which that was done without confusing the charges was certainly most interesting. Then, if one might be allowed a bit of criticism on the designs of men who used to design far better than we could at the present day, one would perhaps venture to say that in some of the Tudor work at King's College Chapel, for instance, the badges seemed to a certain extent a little bit coarse and out of scale with the charges on the shield, because the badge itself was perhaps as large in area as the shield. Then there was one thing which he thought one could gather from the series of views thrown on the screen, and that was as to the great advantage there was in studying heraldry, not only in the flat but in the round. He thought they could learn something with respect to the charges and so on in heraldry perhaps better by having to model the shield than simply drawing it, because then one got to know, in a measure, how the shield must have been constructed, and therefore how the charges which a shield bears were logically placed one in relation to the other. Mr. Hope said a good deal about the freedom there was in heraldry, and that certainly appeared to him to be one of the great things at which modern designers ought to aim. Certainly great freedom was taken by the old designers, but that freedom was entirely lost in the last century and the century before that. Mr. Hope said that the only shape of a shield devoted to one purpose was the lozenge which was devoted to ladies. It was a curious thing, in considering the origin of heraldry, viz, that these were badges or insignia which were worn by the knights enveloped in cumbersome armour, that ladies should ever have thought of indulging in heraldic badges. He supposed for some time after its inception heraldry took a little departure from the strict course which it ought to have followed in its pure developments, and became not only useful but also decorative, and the ladies seized every opportunity that was presented to them of applying such decoration to their already decorated persons. One very curious instance of the use which ladies made of heraldic devices was in Spain, in which ladies who were unmarried displayed a shield in which one half was devoted to their paternal coat, and the other half was left blank on which to put the arms of their husbands. Those, we were told, were called the arms of expectancy. Apart altogether from the decorative point of heraldry, architects especially should find it exceedingly useful from the amount of light it threw upon history. Very often the only clue one had to the date of the building lay in the shields with which it was adorned, and so, altogether apart from the pleasure one had in fine drawing, its historical use was a great point. On one of the slides some shields were charged, not with arms at all, but with letters and figures, and that was an interesting thing to notice. Even in mediæval times the shield was of a shape which would be devoted entirely to heraldic bearings, one would think, but it was used in that instance to carry letters and initials.

Mr. J. J. Stevenson seconded the vote of thanks. On one point in Mr. Hope's lecture he was in doubt, viz., in regard to that gentleman's remark that heraldry began in the thirteenth century. He (the speaker) thought it was as old as the human race. Heraldry must have begun long before letters. It was simply a picturesque manner of writing one's name, and belonged to the same class of things as signs of public-houses and so on, invented for the sake of people who could not read. We had a modern example of old heraldic things in the case of modern merchandise signs. Then another thing might be looked at in that light. He could never understand why it should be called bumptious and upsetting and presuming to put up one's family sign, but we must take care that what we did put up we had a right to put up. But in reference to that, and the modern coat of arms, there was the difficulty of the helmet. We did not wear helmets nowadays, or we might put a crest on a top hat. But how could people's names be represented on a plate, or a shield, or anything else, without putting up a helmet? He desired to make heraldry a practically modern thing. It certainly ought to be a modern thing. He did not in the least see that we should not keep up that beautiful old picturesque way of writing our names in that way. As to the origin of crests that was rather an archæological question, but when one looked at crests one saw they were of enormous size. The crest of the Black Prince in Canterbury Cathedral was a real leopard. He thought every architect ought to know that the mere form of the shield was no matter of importance whatever—it was a matter of mere fashion. In fact, those marks were often put on a coat—at least, we often heard of coats of arms, and in coats of arms they would not take the form of a shield but be simply dispersed over it. Mr. St. John Hope had referred to St. John's College, Cambridge. He (the speaker) was fortunate enough to be the discloser of the chimney in the other college, which Lady Margaret built, viz., Christ's College. On it there were marguerites for Margaret, and the name and title, and a lot of little things about a couple of inches square, all over the chimney piece. There was one remark he would make on the whole, viz., that he thought if heraldry was merely a way of writing one's name he did not see why people should be taxed for doing that.

Mr. Hugh Stannus said that Mr. Stevenson had mentioned the shrinking from using coats-of-arms on the part of clients as being an assumption of too much; and he had found the same feeling; but when a man was of ancient blood or good family, then it was a pity he did not allow it to be stated. And when a man was "a new man," even then he might have a coat-of-arms, on proper application to the Heralds' College. With regard to the helmet, he was always in favour of using it over the shield, with the wreath and mantling falling from it. The whole, when complete, was much more beautiful for decorative treatment. All heraldry was a conventional method of stating a certain fact, and if the conventional method of putting the arms on a shield were adopted he saw no reason why the helmet and its accessories should not be shown. The use of the helmet further gave an opportunity for having a boss or lump coming over the flat shield; and this bossing was the very essence and life of relief-work. With regard to the main question, he thought architects might look upon the subject from two points of view. First of all, Heraldry was introduced to give information, to tell a story as to who were the personages who lived there, who erected the building, who was buried there, or who had been the benefactor generally. That, of course, was the Storiation side of Heraldry.

It was useful to give some statement or story, and to us now it was often the only means of learning dates and names. From the second point of view—that of decoration (and architects had to look at it decoratively more than as matter of Storiation)—there were certain definite principles which governed its introduction. We wish to tell the story; but also to tell it in an artistic manner. He thought that when heraldry was introduced in architecture, then of course it must be subordinate to the principles that govern architecture; and those would be such principles as would require that the shield and all its accessories should show a sense of the shape in which they were enclosed, whether a frieze or spandrel or any other panel; and that, further, they should have some sense of the surface on which they are applied. In the ordinary case of work in relief, Diapering made the surface a tone lower, by reason of the shadow cast upon the ground from the projecting parts. Therefore it was necessary, when a man desired to emphasise the changes, that he should diaper the ground. The folds of the mantling also "force-up" the flat shield, by contrast. That was entirely independent of the question of colour, because probably architectural or external heraldry would be considered as a matter of relief rather than of colour. He felt a little sorry that Mr. St. John Hope had somewhat decried modern heraldry, as he had seen some in Mr. John Clayton's studio, and also by Mr. T. R. Spence, and there was some good work by Pugin, which, in his judgment, was quite as fine as any heraldry that ever was done in the old times. Of course they had not done it "off their own bat," so to say, but by study of the old work; and he ventured to think that by the careful study of the examples of the old work, modern architects, as a body, might hope to emulate, and perhaps to equal it. This, however, could only be done by earnest and loving study.

Mr. J. D. Crace said that in reference to the question of the abuse of the crest independent of its surroundings, it was interesting for a moment to consider what relation the crest and mantling and the helmet had to each other. The crest was probably stitched or fastened to that which became the mantling. All that was bound to the helmet; the cloth was bound to it by the wreath or chaplet or coronet, as the case might be, and the helmet was the solid body on which the cloth with the crest attached was bound by the wreath. That was why it was seen in the seals exhibited on the screen, flying behind as the knight rode rapidly forward. A great deal of the freedom which Mr. Hope had fortunately brought before the architects was due probably to a very thorough knowledge of the general principles of heraldry, and of the meaning of the insignia of heraldry. Freedom was a dangerous thing to adopt by those who had not gone through the mill of real education. We saw that in art every day, and it was displayed more completely than one cared to think. Those magnificent examples of the gateways of King's and St. John's Colleges at Cambridge, and the still finer examples of those magnificent blazons or heraldry devised outside some of the great gates in Spain, where heraldry was carried to a wonderfully rich perfection, and where they formed the decorations of such noble spaces as the great spaces between two round towers of the gateway, where there were areas of 15 or 20 ft. square, covered with the shields and supporters of the sovereign who was represented—he thought those great spaces covered with ornamentation with a meaning were worthy of attention. It was well to bear in mind, where a man was anxious to infuse a meaning of some kind into the ornamentation of his building, that it could be done by heraldic devices in such cases as municipal buildings or state buildings, or buildings for public purposes, or even in some cases buildings for private purposes. They were each interesting in their own way. He had noticed that Mr. Hope said, in showing them the bronze gates of Henry VII.'s tomb, that it was to be wished that such work could be done nowadays. The speaker did not know whether Mr. Hope had ever seen the beautiful brass gates which formed the entrance between the House of Lords Lobby and the House of Lords, but he thought upon the whole they bore a very wonderfully good comparison even with Henry VII. gates, and they were done forty years ago by Hardman from Pugin's drawings, and were well worthy of admiration in themselves as showing that there was the practical ability to produce such things if there was only the knowledge to plan them and the demand for them. It was interesting with reference to the tester for the tomb of Henry IV. at Canterbury Cathedral, which was decorated in colour with heraldic devices and mottoes, to find that that was decorated on three separate occasions, and they could follow very distinctly the three periods at which it was redecorated, and certainly none of them could be later than the time of Henry VIII. That showed that much care had been taken to keep up the character and appearance of that monument.

The Chairman, in putting the vote of thanks, said that architects must look to experts in heraldry if any improvement in modern heraldry were to take place. But architects were fully alive to the importance of this matter in conjunction with their own art. They realised very fully that the poetry and the history of their buildings must always, in point of detail at any rate, largely depend upon the introduction of heraldic devices. One recognised very well in the little almshouses outside the town the value of the small heraldic panel over the gateway, just as much as one recognised the magnificent result in the great castle or the stately church. With regard to modern architecture, they had an excellent example of general heraldic treatment in the Houses of Parliament. The way heraldry had been there introduced, principally by Pugin, over the whole of the building, not only into the architecture, but also the way in which the charges were placed in the shields and the general execution of the detail, was a wonderfully good example of modern heraldry, of which architects might well be proud.

The vote of thanks was then put and carried unanimously.

Mr. St. John Hope, in reply, said he began his paper with the understanding that most of his hearers understood all of what he might call the elements of heraldry, and, as the title of the paper said, he had simply proposed to deal with the associations of it in connexion with architecture. So it did not matter to him whether heraldry began in the twelfth century or whether it originated at a very much earlier period, or whether the heraldry seen on Greek vases was worth while bringing into notice. The question of the use of heraldry by ladies was, of course, a purely archæological one and not architectural. It no doubt originated when heraldry became hereditary. At first arms were not hereditary and crests were not for a long time, and mottoes were not hereditary even now; but when heraldry became hereditary and every house had its own arms, it was used in slightly different ways by the different male members of the family, because they might be the founders of branches of the house. Then ladies used it, but as they did not found branches of a house but a lady sometimes assisted to found a branch of another house, they did not make any difference in the paternal arms, as did the sons. Even the use of the lozenge was not restricted to the ladies. He had mentioned the case of the monument of William de Valence, where the remaining portion of the bedplate of the effigy was adorned with beautiful enamelled lozenges with the arms of England and De Valence on them. Mr. Stevenson objected very much to the use of a helmet, on the principle that we did not wear helmets nowadays, and Mr. Stannus had reminded him that we did not bear shields, but he would like to remind Mr. Stevenson (what he had already tried to make quite clear) that if they once took the crest off a helmet it ceased to be a crest, because the very word crest means a plume or something erect on the head of a bird or beast, and so the first crests were such things as plumes and the heads of birds. With regard to the size of crests, of course it sounded absurd to talk of a man having a lion for his crest, but a man did not have a full-sized lion, he had only a model of one. That poor dilapidated leopard which surmounts the Black Prince's helmet at Canterbury was made after his death, and was part of the paraphernalia that was borne at his funeral. It was nevertheless a real crest, made of leather, and covered with gesso work. With regard to the fixing of crests, on such of the few old helmets as we had we found that, in addition to the holes that were made to fix the lining inside the helmet, and the cushion that carried the weight on the man's head, there were certain extra holes that had nothing to do with the lining and padding, and were obviously made for fixing on the crest. The other holes were generally arranged in pairs, because a lace came through them, which was tied with a little bow outside; but these other holes were distributed regularly round the top, and were no doubt used for fixing the torse and the crest that rose from within it. Mr. Hope did not consider it came within the scope of his paper to talk of that magnificent modern heraldry in the Houses of Parliament; and, of course, it was obvious to any one how very beautiful the heraldry was. But then, Pugin, who was entirely responsible for it, was a man who was simply soaked with mediævalism of every kind, and to draw those beasts and shields and those beautiful badges and so on was as much a second nature to him as it was to the man who carved those beautiful shields in the spandrels of the arcades in the Abbey. Foreign heraldry he had not time to go into, otherwise it was possible to say just as much about the heraldry of Spain or France or Germany as could be said about the heraldry of England; but in discussing the heraldry of one country they were practically describing that of other countries as well because just as there was one prevailing kind of architecture which went through Europe at any particular time, so there was one particular kind of heraldry. The rich heraldry of Spain could, of course, be paralleled in a less splendid degree by examples in our own country; but there was this difference in the heraldry of England and that of Germany or Spain, it did not run riot to quite the extent that foreign heraldry did. The German heraldry was magnificent in itself, and beautifully picturesque, but it seemed to run into extravagances that the English heralds and heraldic artists altogether kept free from. In Spain this was, perhaps, less so than in Germany, and he very much wished that somebody who has been in Spain and knows its buildings would write a paper upon Spanish architectural heraldry, and illustrate it by a series of lantern slides.

The Chairman announced that the next meeting would be held on the 29th inst., when Mr. J. A. Gotch would read a paper on "Heraldry of the Renaissance in England."

The meeting then terminated.

COMPETITIONS.

ASYLUM AT PURDYSBURN.—We are informed on reliable authority that the author of the successful plan for this asylum is Mr. Anthony T Jackson, of Corn Market. Some eight or nine plans were submitted, all by local architects, as stipulated in the conditions of the competition. That by Mr. Jackson, which bore the motto "Alpha," was placed first by the assessor, Mr. Sidney Mitchell, architect, of Edinburgh, and the governors selected this plan. We understand that the design bearing the motto "Efficiency and Economy," and submitted by Messrs. J. J. Phillips & Son, of 61, Royal-avenue, was placed second by the assessor; and the plan marked "150," by Mr. John Lanyon, M.Inst. C.E., of 111, Royal-avenue, third. Mr. Jackson may practically be regarded as the architect to the Asylum Board, as he has done a great deal of work for them, and is well know to the members.—*Belfast News-Letter.*

CONSOLIDATED INVESTMENT COMPANY'S BUILDINGS, JOHANNESBURG.—The plans for the Johannesburg Consolidated Investment Company's new buildings in Johannesburg were submitted to public competition some time ago. The result has now been declared. Mr. G. W. Nicolay is the successful architect. The new buildings to be erected on Commissioner, Eloff, Market, and Joubert-streets will consist of a theatre, hotel, Turkish baths, and a large number of shops with frontages to the streets named and to the two arcades which run through the block from Market-street to Commissioner-street, and from Eloff-street to Joubert-street respectively.

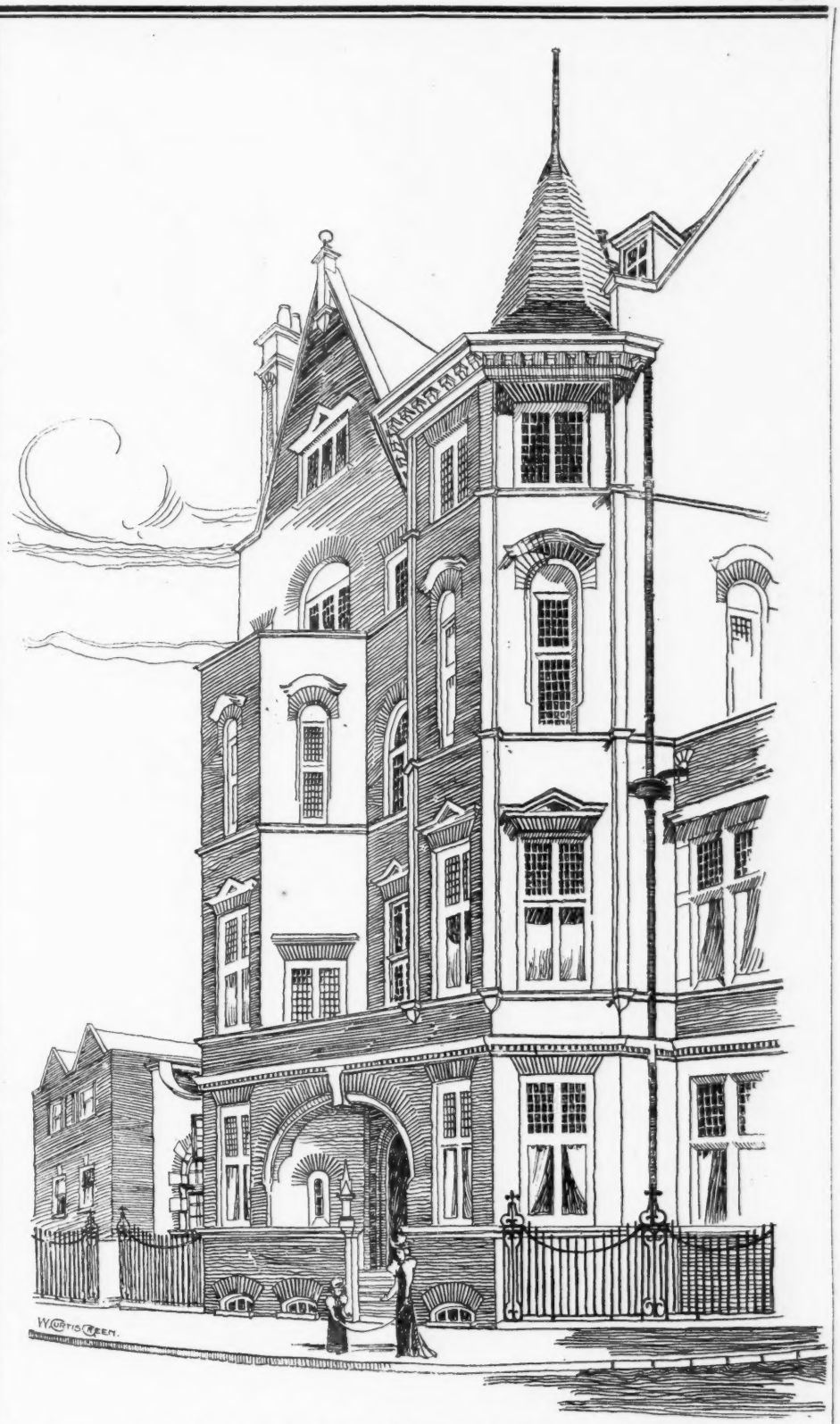
ARCHITECTURAL SOCIETIES.

NORTHERN ARCHITECTURAL ASSOCIATION.—On the 10th inst., at the Meeting-room, Art Gallery, Newcastle, the annual meeting of the Northern Architectural Association was held, under the presidency of Mr. Archibald Dunn. The Secretary (Mr. A. B. Plummer) read the report of the thirty-eighth session, which stated that since last year seven members, nine associates, and six students had been elected, and the roll now stood:—Members, 51; Associates, 61; Students, 39; Total, 151. The report also dealt at considerable length with the meetings held during the year. The Treasurer's report showed a balance in hand of 7*l.* 10s. 7d. The reports were adopted, and on the motion of Mr. J. W. Taylor, a vote of thanks was accorded to the retiring President (Mr. A. Dunn) for his services during the year. Mr. F. W. Rich was elected President for the ensuing year, and the other officers were appointed.

SKETCHES OF LONDON STREET ARCHITECTURE.—XI.:

HOUSE IN HANS-CRESCENT.

THIS is the corner house of a row of eight houses, all different, which have been erected in Hans-crescent from the designs of Messrs. Read & Macdonald, for the Belgravian Land Company, who have lately made great alterations in the immediate neighbourhood in pulling down slums, widening streets, and rebuilding with houses of good design.



Sketches of London Street Architecture.—XI. House in Hans crescent. Messrs. Read & Macdonald, Architects.

THE CAMERA CLUB.

THE practical applications of photography in the arts are now so important that new methods and apparatus deserve careful attention by our readers. The Camera Club has always been among the first to take up any new invention, and is always ready to give help and advice to enable the inventor to perfect it.

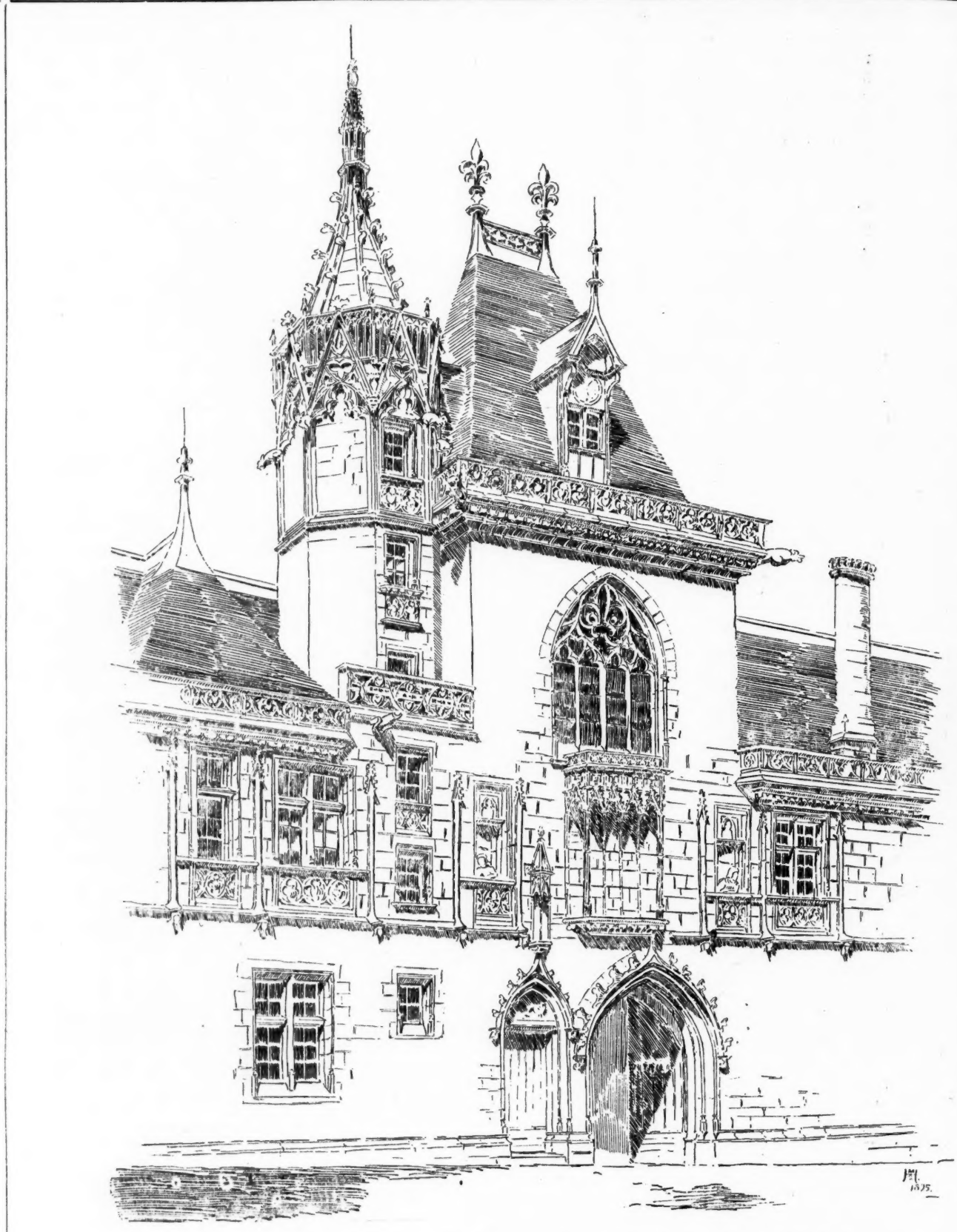
On the 10th inst., a complimentary dinner was given to Mr. R. W. Cox on his retirement from the post of honorary secretary of the Club. Mr. Machell Smith, the Chairman, after regretting the absence of Captain Abney, their President, pointed out that the Camera Club was not an exclusive body of photographers who demanded a diploma photograph from all candidates, but that it welcomed every one interested, however remotely, in photography, who was duly proposed. Professor Armstrong referred to the educational advantages of the Club, and said that lectures and exhibitions were held, on an average, twice a week throughout the session, and that any one, by looking at their programmes for the last five years, would see how fortunate they were in securing distinguished men to give them papers.

After the dinner the guests inspected the rooms of the Club, and Mr. Ives exhibited by means of his "Kromscope" some exceedingly clever stereoscopic photographs in colours. Downstairs there are a large number of dark rooms, and we noticed an ingenious arrangement for printing photographs which we believe is novel. A powerful arc lamp is hung eccentrically above a table on which the printing frames are resting by means of an ordinary bottle-jack, and thus the lamp is kept rotating all the time the photographs are being printed. This secures a uniform distribution of light over the print, and enables a large number of photographs to be printed in a very short time, quite irrespective of the weather.

A most interesting demonstration of X ray work was given by Mr. H. H. P. Powles, who was one of the earliest workers on the practical applications of these rays. He has been experimenting for a long time to see if they can be employed for detecting differences and imperfections in various kinds of woods. His results, so far, are chiefly negative, but he says that there is a large field for research still unexplored. He showed how specimens of bad jointing in electric wiring could be at once detected by means of a fluorescent screen, and how the same method could be applied for finding defects in cabinet work, such as hidden nails and screws where there ought to be none.

CHEMISTRY OF METALS USED IN BUILDING CONSTRUCTION.

THE fourth lecture on matters connected with building given at Carpenters' Hall was delivered on Wednesday evening last by Professor J. M. Thomson (King's College), the chair being taken by Sir F. Abel. By a series of simple experiments, and by means of the lantern and screen, the differences between metallic and non-metallic bodies were illustrated, and the chief properties of certain metals, particularly iron, lead, zinc, and copper, were elucidated. In one experiment a bar composed of two metals, on being exposed to flame for a few minutes was seen to bend and curl up in a remarkable manner. This effect was due, it was explained, to the fact that certain metals expanded a great deal more than others, and if two metals, with different expansive powers, were compounded, they got, by the application of heat, the curve seen in the experiment. It was necessary to know the differing physical properties of metals in order to apply each to its most appropriate use in structural operations. Among the most important of these properties was tenacity, which copper possessed in a high degree, and in a still greater degree, silver and gold. The softness and want of tenacity were, on the other hand, the properties that made lead valuable. Being soft it could be easily bent into any required form, and lead was also of the highest value because it was less readily affected by acids than most other metals. To illustrate the property of fusibility, a metal was shown which quickly softened and became fused in water heated to the boiling point. An alloy might be made of two metals in such a way as to fuse more easily than either metal would fuse separately, a property of which the greatest use was made in type metal. The methods of deriving various metals from their ores were illustrated by pictures thrown upon the screen of furnaces of various kinds, from the simple fusion processes of the bismuth liquation furnace and the lead ore furnace to the improved forms of the modern blast furnace and furnaces for reducing metals by various gases, or by compounding them with other metals and by electrolysis. In one interesting experiment the use of lead in the form of an oxide, in cheapening the process of reduction, was shown in operation before the audience. A quantity of Condy's Fluid, which has the property of being very highly oxygenated, was placed in connexion with a retort containing a small quantity of the ore to be reduced and under the influence of the flame. It was seen to become gradually more and more colourless as it parted with the permanganate and the oxygen to the fusing metal. The effect of electrolysis was shown in another interesting experiment, in which a bar of iron was made to take up a covering of yellow metal (copper) and a white metal (mercury). The causes of the readiness of iron to oxidise or rust, and the unreadiness of some other metals to oxidise were shown by other experiments. Iron in its most elementary or lowest state was quite colourless and difficult to oxidise. The fact that some sandstones, at first white, would, after the lapse of years, turn brown in blotches, was due to the iron in an elementary form contained in them. The more rapid action of pure water on lead than ordinary tap water was shown in another experiment, the slower action of tap water being attributed to the fact that the lead obtained a covering from water which was not absolutely pure that protected it from further oxidation, while the oxidation was more continuous in the purest water because the metal could get no such covering to protect it. This difference was much less observable with



House of Jacques Cœur, Bourges.—The Entrance. From a Sketch by Mr. M. Starmer Hack.

copper and iron than with lead. One of the last experiments showed the advantage of giving to iron or other metal a coating of zinc or tin, and the cases were pointed out in which tinned metal was superior to metal covered with zinc. The difference in the action of chlorine and noxious vapours such as sulphuric acid was illustrated and explained by the Professor in concluding his lecture.

HOUSE OF JACQUES CŒUR, BOURGES.

THIS celebrated house, built in the second half of the fifteenth century, adjoins the Roman ramparts of the town, three of whose towers have been incorporated in the building.

In the niche over the principal entrance there was formerly a statue of Charles VII., and looking out of the sham windows on either side there still remain the sculptured heads of two servants.

The octagonal tower in the courtyard contains, as do two others on the same side, a spiral staircase. The hearts and scallop shells which appear so frequently in the ornament come from the coat of arms of Jacques Cœur.

M. STARMER HACK.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of this Council was held on Tuesday, in the County Hall, Spring Gardens, Dr. Collins, Chairman, presiding.

Loans.—On the recommendation of the Finance Committee it was agreed to lend the Stoke Newington Vestry 6,000*l.* for paving works; the Greenwich District Board 1,900*l.* for the construction of an underground convenience; the Newington Baths Commissioners 7,000*l.* for the erection of baths and wash-houses; and the St. Pancras Vestry 90,460*l.* to enable them to pay off existing bond debts on special paving trusts.

The Chemist to the Council.—The General Purposes Committee brought up the following report, the recommendation being agreed to after some discussion:—

"We have to report that Mr. W. J. Dibdin has, in a letter dated March 2, 1897, expressed a wish to resign his position as chemist to the Council. Mr. Dibdin states that he has for some time past been desirous of engaging in private practice, and as the resolutions passed by the Council from time to time deny him that privilege, he has therefore been compelled to consider his position, and finds that he is well advised in tendering his resignation. We feel sure that it will be with considerable regret that the Council will lose the services of so valuable and able an official. We understand that Mr. Dibdin does not desire that his resignation should take effect until about three months' time. We recommend—'That the Council do accept with regret the resignation of Mr. Dibdin of his appointment of chemist to the Council, and that the resignation do take effect as from June 30, 1897.'"

The Works Committee.—The consideration of

House of Jacques Cœur, Bourges.—An Angle of the Courtyard.
From a Sketch by Mr. M. Starmer Hack.

the adjourned report of the Works Committee, of the half-yearly return of completed works, was then resumed. The Committee submitted a list of nine jobs, the estimate for which was 23,218*l.* 2s. 8d. and the actual cost 25,696*l.* 0s. 4*d.* Six other works, for which certificates had not been obtained, were reported to have cost 33,971*l.* 13s. 1d., as against the Managers' revised estimate of 32,030*l.* 5s. 6d. The total value of work executed in the six months was 149,000*l.* Taking the whole of the works carried out by the Committee since its formation, there was a profit to the Council of 6,566*l.* 5s. 8d.

Last week Mr. Porter moved, and Mr. Cohen seconded, to refer the report back with instructions to the Committee to prepare a fuller and better report.

Mr. Boulnois, M.P., said the whole report was meagre and unsatisfactory. An analysis of the work of the Committee showed that the experiment had been a failure. He should like to see the department abolished, but he was afraid from the tone of the many Councillors that his desire was not likely to be realised within a reasonable time. If the department was not to be abolished then he hoped the Committee would confine their care to such work as might be profitable.

Mr. J. Burns, M.P., pointed to the big profits made in the jobbing works as counterbalancing the loss on other jobs, and complained of the unfairness of some of Mr. Boulnois's criticisms.

Mr. E. White said the report was inaccurate and misleading. The ratepayers had to pay 5,000*l.* more for inferior work than they would have had to pay for good work if contractors had been employed. As to the jobbing work, if an account were rendered for labour only a loss would invariably be shown. The profit was on material supplied by the department to the different Committees. As to the loss on the Shelton-street dwellings of 2,751*l.*, a further sum of 144*l.* would have to be added for pavement works.

Sir J. B. Maple, M.P., said the Committee ought to submit a balance-sheet on the capital account of the department.

Mr. Ward, late Chairman of the Committee, said one of the complaints made against the Committee was that they had not reported on works completed up till the end of November. That was what the Committee wanted to do, but the Council refused to allow them to carry the report up to that date. Mr. Boulnois complained of the meagreness of the report, but it seemed to him that it was too full for many members to read, judging from the nature of their criticisms. They were constantly being told that they had made a loss on certain jobs, but when they made a profit nothing was heard of it. On the last two workmen's dwellings they made a profit of 1,500*l.*, but none of their opponents wanted to refer to that when they could point to a job on which there had been a loss. This sort of treatment seemed to him to be very unfair.

The amendment was carried on a show of hands, and on a division it was also carried by 55 votes to 54.

Combined Drains.—The following adjourned report of the Main Drainage Committee was brought up, and the recommendation was agreed to:—

"In connexion with the question of the liability of Local Authorities to repair combined drains, reference has frequently to be made to the records in the custody of the Council of the proceedings of the various Commissioners of Sewers which existed between December, 1847, and December, 1855, prior to the constitution of the Metropolitan Board of Works. In contested cases between Local Authorities and owners of houses having combined drains, it is necessary to ascertain whether any applications were received for permission to lay down such drains, and whether such applications were sanctioned and confirmed by the Commissioners. We are informed, however, that the applications are very imperfectly indexed, and that to find one that may be required often entails a great deal of labour and inconvience. In view of the difficulty thus experienced several of the Local Authorities have urged upon us the desirability of having a proper index prepared. After carefully considering the matter we are of opinion that the request should be acceded to so that the applications may be readily referred to. It is estimated that the cost of the work will not exceed 150*l.*, for which expenditure provision is made in the estimates for the ensuing financial year. We recommend:—That the Council do sanction the expenditure of a sum not exceeding 150*l.*, in connexion with the preparation of an index of the applications referred to."

Improvements.—The Improvements Committee recommended, and it was agreed:—

"That the estimate of 2,550*l.* submitted by the Finance Committee be approved and that the Council do give its consent to and do contribute on the usual conditions one-half of the net cost of the widening of Upper Richmond-road, near Union Church, proposed to be undertaken by the Wandsworth District Board, and shown upon the plan approved by the Improvements Committee on December 15, 1896, such contribution not to exeeed the sum of 2,550*l.*" And

"That the estimate of 1,213*l.* submitted by the Finance Committee be approved, and that the Council do contribute on the usual conditions one-half of the net cost of the proposed widening of High-street, Plumstead, between Nos. 1 to 34, as shown upon the plan forwarded by the Vestry of Plumstead on January 22, 1897, such contribution not to exceed the sum of 1,213*l.*"

The Water Supply Question.—On the recommendation of the Water Committee that the engineer be instructed to proceed with the plans and sections of the Wye portion of the Welsh scheme of water supply, and that they be authorised to incur an expenditure of 1,500*l.* for this purpose during the financial year,

Mr. R. A. Robertson moved that it be referred back. He said in view of the recent action of the Government and the House of Commons they were not within measurable distance of going to Wales for an additional supply, and, therefore, he did not think it advisable to spend any large sum in surveys. If many years hence they had to go to Wales, the reports now obtained would be obsolete. The Welsh water was very soft and was impregnated with lead, and he believed the people of London had come to the conclusion that there was no need for going such a long distance to find a supply. If the water of London was properly treated, there would be no better supply of water for the Metropolis, especially if it were softened and purified by the lime process.

Dr. Longstaff seconded the amendment.

Mr. Idris said there was urgent need of going on with the surveys, for other towns were asking for power to obtain water from Wales, and were spoiling the area suggested for London. It was because London was always so behind other towns that the ratepayers had to pay so much.

Sir John Lubbock, M.P., supported the pro-

posals of the Committee. The amount was small, and it was important that they should learn all they could about these areas. He thought, however, that the Committee were somewhat inconsistent in their action.

The amendment having been negatived, the recommendation was adopted by a large majority.

Horton Asylum Foundations.—The Asylums Committee reported as follows :—

"We have to report for the information of the Council that in response to our invitation for tenders for the above based on a schedule of prices, we received the following :—

	£.	s.	d.
Leslie & Co.	52,059	6	7
W. Cunliffe	52,699	10	5
C. Wall	53 761	17	0
H. Wilcock & Co. ...	54,190	11	8
J. Shillit. e & Son ...	57,215	5	5
S. Kavanagh	57,339	12	0
Lawrence & Sons ...	57,658	6	6
J. Jackson	58,663	13	4
H. Lovatt	59,480	9	0
Pedrette & Co. ...	63,622	14	2
B. Cooke & Co. ...	65,350	1	8
Kirk, Knight, & Co. ...	65,371	0	0
Martin Wells & Co. ...	67,200	0	0

and that Messrs. Leslie's tender being the lowest, we have accepted the same, and instructed the solicitor to complete the contract. It may be within the Council's recollection that the plans of this asylum are a duplication of the Heath Asylum, Bexley, the foundations of which were estimated to amount to 32 732*l.* It may, therefore, be stated in explanation of the difference in amount that the site at Bexley has a subsoil of gravel and sand, while the character of the Horton site is such that the architect considered it necessary to give instructions for the quantities to be increased by 40 per cent., representing a sum of 13,022*l.* A further explanation of the difference in the estimated cost of the two works is the increased cost of bricks, estimated at 4,890*l.*"

The Council, having transacted other business, adjourned at 7 o'clock.

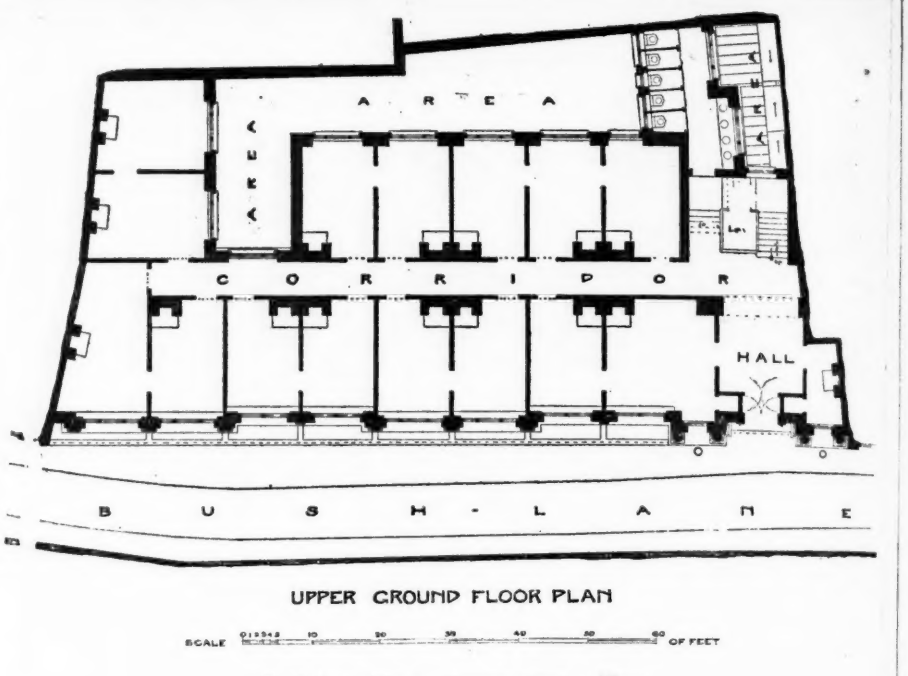
Illustrations.

ST. WULFRAN, ABBEVILLE.

THIS church, like Beauvais Cathedral, is but a torso; if completed, it would have been a cathedral of the first rank, and one of the most beautiful. It was commenced in 1488, but the work was interrupted in 1539. A choir was added in the seventeenth century. The earlier work includes the façade and a nave 31 mètres long, and the same in height. The central door is covered with sculptured scenes from the life of the Virgin, presented by a rich shopkeeper of Abbeville in 1550. The three western portals, once populous with statuary, are crowned by lofty, pierced gables, above which is an open parapet. The great western window is not a simple rose, but a rose resting on a group of lower lights. Higher up is another open parapet, and then the gable of the nave, with three colossal statues of the Virgin, St. Wulfran, and St. Nicholas. Higher still rise the upper stages of the towers, pierced with long double windows, and terminating in an open parapet 53 mètres from the ground. The inner western angles of the towers are flanked by turrets. A staircase turret runs up the southern tower, and is the only weak point in one of the finest façades in France. A drawing of the south doorway, by Mr. H. Wilson, appeared in the *Builder* of September 19, 1891.

ST. RIQUIER, SOMME.

THIS church, now parochial, was once attached to the famous abbey of St. Riquier, which gave the Church twenty-seven Popes, 200 Cardinals, and more than 500 Bishops. It is a work of the latter part of the fifteenth and of the sixteenth century. Its west portal is a veritable reredos. In the tympanuum is a Jesse-tree; above, the Holy Trinity, represented as at St. Wulfran, Abbeville, and surrounded by colossal figures of the Apostles. Above are three statues representing the crowning of the Virgin. Between the tower-windows is a statue of St. Michael, with Adam and Eve on one side, Moses and David on the other. The tower is flanked by charming octagonal turrets for staircases. The side portals are covered with Renaissance arabesques. The church is in the shape of a Latin cross, with apse, ambulatory, and a chevet of eleven chapels. The church contains much fine woodwork, and Byzantine reliquaries. St. Riquier lived late in the fourth century; in later times the offerings at his shrine amounted to more than 80,000*l.* per annum; hence the richness and the profusion of the sculptured ornament.



UPPER GROUND FLOOR PLAN

SCALE 0 10 20 30 40 50 60 OF FEET

Bush-lane House, Cannon-street. Plan.

PALAZZO COMMUNALE, PIACENZA.

THE Palazzo forms one side of the Piazza dei Cavalli at Piacenza, and its end elevations look upon streets leading into the corners of the piazza. At the rear is a court, two sides of which have windows similar in detail to those of the front.

The building was begun about 1280. The lower portion is in red and white limestone; the remainder is in brick and terra cotta.

It will be noticed that the windows all vary in detail, and the two ends of the building also differ.

The illustration is from a drawing by Mr. M. Starmer Hack.

SKETCH AT BURGOS.

WE devoted an article and some photographic illustrations to Burgos Cathedral in the *Builder* of January 25 of last year. We are glad to supplement this by Mr. Hack's excellent sketch of the two towers rising above the houses, which shows them from a different point of view from our former illustrations.

The west front was begun about 1220. The open spires were added, it is said, by John of Cologne in the fifteenth century; they are 300 ft. high. The central lantern, an octagon on plan and 180 ft. high, is carried on four circular piers. It was finished about 1567, the architect being Juan de Vallejo.

No. 1, CONDUIT-STREET.

THIS is the front elevation of the proposed new shop building at No. 1, Conduit-street, W. The ground floor will be used as two shops, whilst the first and second floors are planned for a series of trying-on rooms (the shop being a tailor's), and the upper part of the building as workshops.

The materials to be used in the front are Fareham red sandfaced bricks with Ancaster stone dressings, and the roof will be covered with Westmoreland green slates. Mr. H. Huntly-Gordon is the architect.

BUSH-LANE HOUSE, CANNON-STREET, E.C.

THIS is a block of professional and commercial offices, situated one door from Cannon-street, and occupying a ground area of about 6,000 ft.

The building has a frontage to Bush-lane of about 115 ft., and the elevation has been carried out in red bricks, with Portland stone cornices, caps, bases, and sills.

The entrance feature, however, which forms the subject of the illustration, and which is conspicuous from Cannon-street, has been carried out entirely in Portland stone.

The building comprises lower ground and upper ground floors, first, second, third, and fourth floors, and contains ninety-six rooms on the various floors, which are served by a stone staircase and by a Waygood passenger lift.

On each half-landing there are extensive ranges of water-closets and lavatory basins.

The whole of the floors are fireproof, and each room, with one exception, on each floor, has separate access to the corridor, as illustrated by the plan published.

The entire building is lighted by electricity.

The amount of the contract was 18,000*l.* The contractor was Mr. H. Lovatt, of Wolverhampton; and the architect, Mr. Delissa Joseph, of London.

NEW ROOM AT "THE WOOD."

THIS is a sketch of the interior of a new room forming part of some additions to an old house on Sydenham Hill known as "The Wood," now the residence of Mr. Alderman Newton. This room is 30 ft. square and about 18 ft. high, and is intended to be used as a billiard-room and also for music. It is lighted by two large windows on the east and west sides. Opposite the fireplace is a gallery approached on either side by stairs, the gallery communicating also with a group of rooms on the first floor.

The ribs of the ceiling, the cornice, wall-linings, stairs, gallery, and overmantel are of dark oak, executed by Messrs. Waller & Co.; the stone and marble fireplace was carried out by Messrs. Farmer & Brindley; the general building work was done by Messrs. John Allen & Sons. Mr. C. H. M. Mileham is the architect.

DRAWINGS FOR THE ROYAL ACADEMY.

As before, we shall be glad to take charge of and deliver at the Royal Academy any drawings sent to us in time to be photographed before the day of delivery, with a view to subsequent publication in this journal and in the "*Builder* Album of Royal Academy architecture."

We cannot accept any drawings sent to this office later than Saturday morning March 27, before 12 noon.

Architects sending drawings are asked to give special attention to the following requirements of the Royal Academy :—

1. All frames must be gilt.
2. Every drawing must have a label on the back, giving legibly the title and the artist's name and address.
3. Every drawing must have a similar label attached to the frame by a card so as to hang over in front.
4. Every drawing must be accompanied by a letter addressed to the Secretary of the Royal Academy, and signed by the artist, containing the artist's name and address, and the title or titles of the drawings sent. If more than one drawing is sent they must be distinguished by numbers, and the corresponding number must be repeated in the labels fixed to each drawing.

N.B.—We cannot undertake to supply or affix labels when omitted by the oversight of the sender.

ARCHÆOLOGICAL SOCIETIES.

LONDON AND MIDDLESEX ARCHÆOLOGICAL SOCIETY.—The second winter meeting of this Society was held on the 9th inst. at the London Institution, Finsbury-circus, when Dr. Freshfield occupied the chair. There was an exhibition of Roman and other pottery, &c., discovered during the past month in excavating the new Central London Electric Railway. Among other objects exhibited was a very beautiful and delicate goblet of Venetian glass, which is believed to be the most perfect specimen yet discovered in the City; it has a richly-moulded stem, and is probably sixteenth century work, and was discovered in an old well about 16 ft. below the surface. There were also two money-boxes of glazed buff ware, and a Delft plaque beautifully painted in colours of blue, green, orange, and yellow; likewise a Bellarmine jug in glazed stoneware, minus the neck, but the body had an armorial medallion and shield and other devices. A three-legged pipkin, a two-handled tyg or loving-cup, and an engraved brass spur were also shown. All these relics are now located in the Guildhall Museum. Mr. E. H. Freshfield, hon. sec., also exhibited an old beadle's staff-head in silver, which had been sent to him from the Birmingham Assay Office. He said it was supposed to belong to the parish of St. Magdalene, Bermondsey, and would be returned to its proper owners. He read the Latin inscription on it. Mr. Deputy White proposed a vote of thanks to Mr. H. C. Richards, M.P., for his exertions and success in preventing the demolition of St. Mildred's Church, Bread-street, for the purposes of the City and West-End Railway. This was carried unanimously. The Rev. J. D. Mullins then read a paper on "The Parish of St. Stephen, Coleman-street; its Church and Records." The church of St. Stephen was first heard of in 1180, and was no doubt for some years a chapel-of-ease to St. Olave's, Jewry. In 1456 it became an independent parish, and the vicar was paid 11*l.* per annum. Mr. Mullins produced several interesting church registers containing references to the devastations of the Plague in this parish, and drew attention to Dr. Freshfield's book containing exhaustive references to the history of the church since the Plague. This church was destroyed in the Great Fire, 1666, and rebuilt by Wren, as we now see it, in 1676.

SOCIETY OF ANTIQUARIES.—At the ordinary meeting on March 11, Dr. Edwin Freshfield, Treasurer, in the chair, Dr. Windle exhibited a collection of Neolithic flint implements found in the parish of Tardebigge, Worcestershire. Mr. A. Bulleid read an account, illustrated by lantern slides, of the discoveries made during the past season in the late-Celtic lake village at Glastonbury.

Books.

A Handbook of Greek Sculpture. By E. H. Gardner. Parts I. and II. Macmillan. 1897.

WE specially recommend this handbook of Professor Ernest Gardner to our readers because of one distinctive feature which marks it out from the rest of the numerous handbooks and histories of Greek art constantly appearing. In his introduction—by far the most valuable part of the whole work—the author devotes a section to the materials and processes of Greek sculpture. These are matters too often neglected by the student, matters also in which the material for study is not very easily accessible. It is no uncommon case to find a student well posted up in the literary facts of his subject, in the statements of Pausanias, the art criticisms of Lucian, and yet ignorant or careless of, *e.g.*, such matters as the distinction between the coarse-grained "island" marble and that which comes from Pentelicus, or again the bluish marble of Hymettus and the local Peiræus stone. Such distinctions as these, easy enough of detection once fairly and squarely pointed out, are the actualities on which the dating and classifying of ancient sculpture must rest, and yet for the simple reason that archæology has so far been treated as the "handmaid of literary scholarship," they have found no place hitherto in student's manuals. In the course of this introduction, Professor Gardner deals further in detail with such questions as the casting of a bronze statue, and the use of pointing from a finished model—questions usually relegated to the professional sculptor. How needful this sort of knowledge is is shown by the simple fact that an important fragment of the west pediment of the Parthenon lay for three-quarters of a century in the British Museum, undetected by generations of archæologists, till a sculptor's eye restored it to its right position. Archæologists need not and cannot become practical sculptors and architects, but, until they take the trouble to acquire some knowledge of the technical proceedings of both, they not only ignore valuablee vidence but run the risk of writing nonsense intolerable to the expert.

We wish that we could say the remainder of Professor Gardner's book was half as interesting or as original in method as his Introduction, but, once the History fairly begun, it becomes heavy reading. It is, however, best to recognise at once that all the various faculties needed to make up the ideal author on a subject so composite as Greek sculpture cannot be found in one man. The author who delights in the details of technical procedure is pretty sure to flag in interest when he comes to the interpretation of monuments. The Introduction is so valuable that no student can afford to leave himself without the book, but in the "History" proper he will not find much that is new, and still less that in point of treatment is fresh or stimulating. We regret that Part II. was not delayed another year, which would have allowed the author to include, as he had originally intended, the sculptures from Delphi. The reliefs from the Treasury of the Siphnians and from the Bœotians, not to mention the bronze statue of "Hiero," are so remarkable, in some respects so novel, that, once published, all books in which they are wanting must fall out of date. Professor Gardner thinks that pending their full publication by the French authorities it would be "rash to include them in a Handbook like this." In this he is true to his general principle; he has "attempted to confine himself to such facts or theories as have already met with general acceptance among archæologists, or such as seem to rest upon evidence that cannot easily be shaken by new discoveries or future controversies." This confines the book within very narrow, if perhaps prudent, limits, and it certainly does "provide the student with a framework into which he can easily fit all the knowledge that he may acquire from subsequent reading and observation."

Beauty and Art. By ALDAM HEATON. London: W. Heinemann. 1897.

THE book published under this attractive but rather high sounding title is not an essay on the higher æsthetics, but merely a small collection of essays or lectures on some points in connexion with decorative art: "Taste," "Beauty in Form and Colour," "Decoration of the House," "Fabrics," and "Furniture and decoration of the eighteenth century," being the subjects of the several chapters. The title of the book is therefore rather misleading; it suggests a treatise of a much more serious and philosophical kind. There are many things in it that one quite agrees with, but they are not new for the most part.

The most original point in the book is that which Mr. Heaton makes in regard to the contrast between a surface of a certain general colour in nature, and the same colour (so-called) as it is generally seen in manufactured materials; or rather, he is original in his method of illustrating the subject. He takes as an example from nature the bell-gentian as "about as crude a piece of violent colour" as one can find in nature. He examines this flower by small squares at a time, by means of a card pierced with the slits for the purpose, and shows that "in this startlingly blue flower not one half is coloured as a careless observer would suppose the whole to be. . . . . The exceeding blueness of a gentian arises from the fact that all these greyish and partially blue and green tints *lead up* to the fierce blue of the lip; it is a splendid instance of the force of gradation, the blueness of the blue being all the bluer to our eyes because of the dulness of the other tints." Then he points out that a lady who has made up her mind to a bright blue dress buys the whole quantity of one tint.

The same examination is made of some other natural colours, with the view of showing practically that in nature colours are always gradated; the lesson being to avoid raw and crude expanses of colour. We may observe however, that some textile materials, though their actual colour when extended may be all the same, have the quality of making gradated tones when used in folds. One has only to recall Gainsborough's "Blue Boy," and how little blue pigment there actually is in it.

In the chapter on "Taste" we quite agree with the author in his view of the bad quality of French taste generally, and there is probably a good deal of truth in his conclusion that the low level of taste in France is largely due to the influence of mere fashion in women's dress, which extends its baneful influence to other things, and leads people to consider taste in design only as a matter of novelty in fashion. The contrast between the English country house, "inartistic for the most part, but unpretentious" (not always), and the modern French house, is not a bit too strong. The modern French "maison de campagne" is one of the most detestable kinds of erection to be met with in the whole history of architecture (if it can be called by that name).

In the chapter on "Eighteenth Century and Furniture and Decoration" the general reader may find some useful truths in regard to the much overrated name and productions of Chippendale, who has become latterly a fashion with people who have nothing to guide them but fashion.

Spon's Architects' and Builders' Price Book, with Useful Memoranda and Tables. By W. YOUNG, Architect. Twenty-fourth Edition. London: E. & F. N. Spon, Limited. 1897. Pp. lxxi., and 416.

THIS is a rival of "Laxton's Price Book;" younger, indeed, but still old enough to have lost some of its pristine freshness. The "useful memoranda" on "Drains and Sewers" are a generation old, and permit rain-water pipes to be used for drain-ventilation, while they make no mention of iron drains, disconnecting traps, and inspection chambers, flushing tanks, and other details now considered "useful" by sanitarians. The memoranda on "Girders" also reveal their antiquity, larger sections of joists being now rolled than are given in the tables, and more economical forms of girders being used than that shown in fig. 28. Under "Columns," some useful information on cast-iron columns and stancheons is given, but steel stancheons are not mentioned. May we ask what "useful" purpose is served by the inclusion in a "price-book" of the dimensions of cathedrals, illustrations of Gothic mouldings and the Five Orders, and the symbols of saints? Would it not be as well if the space given to these and other extraneous matters were occupied by the prices of bath-boilers, copper cylinders, wet gas-meters, iron drain-pipes and soil-pipes of various weights (glass-lined and otherwise) with bends, junctions, traps, &c., gas-fittings (incandescent, regenerative, ordinary, &c.), blocks of artificial stone other than paving,* salt-glazed bricks and sinks, special fire-resisting floors and partitions, and other details of building construction, for which architects and builders may now search the price-book in vain? Surely the quotations for D-traps and small brick drains might now be spared. In the next edition we hope that the disorder which has gradually developed throughout the book will be greatly reduced, if not entirely removed; *e.g.*, prices of enamelled bricks appear in four different places, 173 (not 174, as stated in the index), 183, 184, and 393; and Westmoreland slates at pages 265 and 393. Many of the prices in the book are very high. The "prime cost" of Portland cement "at works" is certainly not 36s. 6d.; this price includes for 10 or 11 bags, for each of which an allowance of one shilling will be made on its return, and even after allowing this, the price is too high.

Our intention is not to condemn the book but to improve it. It possesses several excellent features and contains much useful information, but more care in revision must be exercised and greater assiduity displayed in trying to keep the book up-to-date, if it is to be of much use to those persons for whom it is intended.

TRADE CATALOGUES.

MESSRS. LONGDEN & CO. (Sheffield and London) send us their illustrated supplementary catalogue of grates, fenders, &c. Most of these are of an ornamental character, and we have pleasure in recommending them for the general good taste shown in the designs, and the perception which they show as to what can and cannot be done in cast iron work; a praise which unhappily one can very rarely give to catalogue illustrations of this kind. With the cast work there is combined a good deal of hammered work

* On page 163 we are told that "a reliable price cannot as yet be given," but this is one of the sentences that need revision.

in brass and copper, and there is nothing florid or over-done in any of the designs. Architects who wish to select grates in stock may be recommended to this catalogue. It includes also an illustration of a ventilating radiator with air tubes for heating by convection. ——Messrs. Messenger & Co. (Loughborough and London), send us their catalogue of conservatories and glass houses generally, with illustrations of a number of houses built by them. The book is, however, more than a mere catalogue, as it contains a good deal of practical information in regard to the construction of conservatories, the points to be specially attended to, &c. Messrs. Messenger appear to abide by the old system of puttied glass, and give their reasons, which are worth consideration, though they may not be entirely convincing.

Correspondence.

To the Editor of THE BUILDER.

CARDIFF ARCHITECTURE.

SIR,—I notice in the *Builder* of the 13th inst., illustrating Cardiff, that the two banks for the County of Gloucester Banking Company are described as being the work of Mr. Pickwell. I beg to inform you that these buildings were carried out by the firm of Jacobs & Pickwell, architects and engineers, and that the designs and the whole of the drawings, specifications, and quantities were done by me. This applies also to all other architectural work done in Cardiff, Penarth, and neighbourhood by the firm of Jacobs & Pickwell. I may add that Mr. Pickwell is a civil engineer. I shall feel obliged by your referring to this in your next issue. B. S. JACOBS.

Hull, March 16, 1897.

*** The mistake, if it be one, is not our fault. Our representative saw Mr. Pickwell, who did not give any other name than his own in connexion with the buildings.—ED.

COLLECTING AREA FOR A RAINWATER TANK.

SIR,—I wish to know what is the best and cheapest covering for a large area—say 1,000 square yards—with the idea of catching the rainfall on its surface and storing the water for use. In this instance it is intended to assist the supply of water for stock on a farm where water is otherwise only obtainable from a well 250 ft. deep. The labour of raising sufficient water from this well for a large number of cattle is consequently enormous. It is usual in such cases to cover a considerable area of the side of a hill or slope with some kind of pavement, and to collect the rain falling on this in a large tank. The "catch" or area covered in this instance is on the side of a chalk hill. The chalk is on the surface. The best covering I can think of is a layer of tar pavement or asphalte 1½ in. thick; but I am afraid this pavement would destroy itself by its expansion and contraction. The only check to this would be by inserting ¾ in. wood slips at intervals of 6 ft. to take the expansion and then this would necessitate making the site of comparatively even gradient. I should be glad to hear the experience or views of any of your readers. I should also be glad to know what would be the best composition of a tar or asphalte pavement such as I propose.

HOMO.

"SKETCHES OF LONDON STREET ARCHITECTURE."

SIR,—I have no wish to encroach on your space, as Mr. Wade has done, with matters of purely personal interest, but it is obvious that I cannot let the matter rest as it is. It is quite true I was a "paid assistant" in his office at the time, but he has omitted to state that I was carrying on a private practice with his consent.

Mr. Wade's statement, "a few months ago I found it necessary to dismiss him," is contrary to the facts, which are as follows:—On October 27 of last year, while I was away from town on Mr. Wade's business, a private letter of mine from a client was opened and answered by my principals, to the effect that the said letter had been addressed in error to their chief draughtsman, and that they would undertake the work. Naturally, I at once gave Mr. Wade notice, on receipt of which he sent me a letter of dismissal.

That I was architect of the house in question is proved by the following facts:—1. I designed and detailed the house entirely in my spare time. As compensation for time spent in necessary supervision during office hours, I obtained 40*l.* for Mr. Wade from my client. 2. Accounts and certificates for this work were signed by me. 3. In the documents prepared for the purposes of a law suit, which was pending between my client and the builder, I am referred to as architect.

J. LEONARD WILLIAMS.

The Student's Column.

SPECIFICATIONS.—XII.

HOT WATER FITTER.

THERE are two distinct branches of work which come under this heading. First, the supply of hot water to be laid on for use; and second, the provision of heating apparatus, in which the hot water is used simply as a means of transmitting heat. Attempts have sometimes been made to combine these two functions in one apparatus, but the result has never been entirely satisfactory; and it is far better to keep the two distinct, each with its separate arrangement of pipes, &c.

We will therefore give examples of methods of specifying the works for the two different purposes.

In the supply of hot water for domestic purposes there are two opposing systems, under one or other of which various installations are generally classed. First, the cylinder system, which is certainly the safer and most generally adopted; and second, the older tank system. We will commence with the specification of the work required for domestic purposes with the former system.

Hot Water Supply.—The hot water supply to is to be fitted up on the cylinder system in accordance with the following details, and is to be tested to the satisfaction of the architect before being approved:—

Boiler.—The boiler is to be a welded wrought-iron boot boiler, ⅜ in. metal, to hold gallons, properly set on fire-bricks to form flue under and at back of same and is to be provided with two manholes, with cast-iron plates and screws. Particular care is to be taken that the manhole covers are absolutely watertight.

Cylinder.—The cylinder is to be a galvanised wrought-iron hot-water cylinder to hold gallons, of ⅛ in. plate, with wrought-iron manhole plate bolted over the manhole with gun-metal bolts, tapped and screwed with inside strengthening plate (or if preferred an elliptical plate with external iron bridge piece may be specified). The cylinder to be fixed in kitchen in position where directed on strong T iron brackets built into the wall. The cylinder is to be enclosed with ⅜ in. polished mahogany lagging leaving a space of 2 in. clear between the cylinder and lagging, which is to be filled with slag wool. The lagging to be secured with brass bands 1½ in. wide tightened up with screws. Top and bottom of cylinder enclosures to be ¾ in. polished mahogany with rounded nosing.

Pipes.—All the pipes for hot-water work to be wrought welded steam-pipes, each to be fixed to stand 1 in. free from wall and supported on neat brackets of wrought-iron, screwed to blocks plugged to the wall, provision being made for expansion and contraction. No elbows are to be used, but bends on an easy sweep. Branch pipes in all cases to have a bend next to T union. The circulating pipes between boiler and cylinder to be 1½ in. pipes, the main circulating pipes 1¼ in., the supply to bath to be 1 in., and to the lavatory basins and sinks ¾ in.

In fitting pipes to boiler and cylinder special care is to be taken that the boiler is fixed level, and that no pipes project into the interior of either the boiler or cylinder. The boiler is to be tapped and screwed for pipes which are to have back nut screwed on outside. The connections of pipes to cylinder are to have bosses riveted on for screwing to pipe. The arrangement of pipes where connected to cylinder to be carried out as sketched in margin.

Safety Valves.—The boiler is to be fitted with a dead weight safety valve of approved pattern, arranged to open under pressure of lbs. to the inch. (The pressure will be, of course, arranged to suit the head of water in each case).

We now proceed with the specification of work for hot-water supply on the tank system.

Hot-water Supply.—The hot-water supply to is to be fitted up on the tank system in accordance with the following details, and is to be tested to the satisfaction of the architect before being approved.

Boiler.—The boiler is to be a welded wrought-iron saddle boiler ⅜ in. metal to hold gallons; properly set on solid base of firebricks with flue carried up to back of same, and is to be provided with manhole on top with cast-iron plates and screws. Particular care is to be taken that the manhole cover is absolutely watertight.

Tank.—The hot-water tank is to be a galvanised wrought-iron tank, to hold fifty gallons, of 14 B.W.G. thickness, with wrought-iron manhole and plate bolted over the manhole. The tank to be placed in where directed on strong T iron brackets built into the wall. Fit up the supply to same with cast-iron cistern and cover, size 15 in. by 7½ in. by 10½ in.

Pipes.—All the pipes for hot-water work to be welded steam-pipes, each to be fixed to stand 1 in. free from wall, and supported on neat wrought-iron brackets, screwed and plugged to the wall, provision being made for expansion and contraction. No elbows are to be used, but bends of an easy sweep. Branch pipes in all cases to have a bend next to T union. The circulating pipes between boiler and tank to be 1¼ in. pipes, the supply to both to be 1 in., and to lavatory basins and sink ¾ in. The supply pipe from cold-water cistern to feed cistern to be 1¼ in., with full way brass ball valves with copper ball. The pipe between the cistern and hot-water tank to be also 1¼ in., and to have the necessary dip below hot-water tank. The overflow from cistern to be 1½ in. with full way brass screw union. In fitting pipes to boiler especial care is to be taken that the boiler is fixed level, and that no pipes project into the interior. The boiler is to be properly tapped and screwed for pipes which are to have back nut screwed on outside.

Safety Valve.—The boiler is to be fitted with dead-weight safety-valve, of approved pattern, arranged to open under a pressure of lbs. to the square inch.

We can now take some examples of the method of specifying work for hot-water heating. These may be carried out on either the low-pressure system or high-pressure system.

Heating Apparatus.—The heating apparatus to is to be fitted up on the low-pressure system in accordance with the following details, and is to be tested to the satisfaction of the architect before being approved.

Boiler.—The character of the boiler will depend upon the amount of work which it is required to do, and may vary from a small wrought plain welded saddle boiler to a large Lancashire or Cornish tubular boiler.

Pipes.—The pipes generally used are either 4 in. cast iron or 3 in. wrought iron. The specifications should stipulate which is to be used, and should specially provide that the size of pipe mentioned, whether 4 in. or 3 in., is to be internal diameter, and that pipes are not to be less than specified diameter. Aso the weight per yard run should be given, which may be, say, 30 lbs. per yard for 4 in. cast iron pipes. Cast iron pipes would generally be used only where the pressure is moderate, say, up to 25 ft. head of water, for the sake of the joints.

Joints.—Specifications should state what kind is to be used, whether socket joints or flange joints, such as Jones's improved flanged pipe joints, or Jones's improved expansion joints, which are some of the best up to a head of about 25 ft. of water.

Valves.—Enumerate the valves required; state their position, and describe whether throttle valves, screw-down valves, screw slide valves or (if wrought-iron pipes) gun-metal valves.

Feed Cistern.—Feed cistern to be a cast-iron cistern (state size, which would vary with the amount of pipe, as it will serve for expansion cistern. Of course, the greater the length of pipe the more expansion must be provided). Feed cistern should have 1 in. supply from cold water cistern with full way gun-metal ball valve and copper ball, and 2 in. overflow with full way gun-metal screw union.

In specifying work for the high-pressure system of heating, the architect must determine whether expansion tube is to be used, which is the better where a very high temperature is required in the pipes, or whether a relief valve is to be employed instead, which admits of the apparatus being worked at a lower pressure, and consequently a lower temperature, and under these circumstances has many advantages. The specification might run thus:—

Heating Apparatus.—The heating apparatus of to be fitted up on the high-pressure system according to the following details, and is to be tested to a pressure of lbs. to the square inch, to the satisfaction of the architect before being approved. The pipes are to be ¾-in. bore welded steam barrel, ft. of which is to be coiled round furnace for heating. The furnace to be built in fire bricks, one and a half bricks thick, domed over at top with ft. super of fire-bars, and the necessary furnace-doors, dampers, flue and soot doors. Specify the size of expansion tube, which will depend upon the amount of pipe. The expansion for a temperature of 300 deg. is $\frac{1}{10}$th quantity of water in the

whole apparatus. This amount, of course, must be increased for a higher temperature or decreased for lower. Specify the position of filling tube with its cap, and any stop-cocks required.

GENERAL BUILDING NEWS.

ST. GEORGE'S CHURCH, BLOOMSBURY. — On the 12th inst., a meeting of the parishioners of this church and others was held in the Vestry-hall of the parish, the rector, the Rev. A. B. Boyd Carpenter, presiding. From a statement made by him, and endorsed by Mr. C. Fitzroy Doll, the architect who has been consulted, and who has made a thorough examination of the fabric, it appears that the necessity for considerable repair is urgent. The stonework is decayed and dangerous, and the lead roof is faulty and admits water—as may be seen from the inside—in many places. The inside is exceedingly dirty, and whilst repainting it is proposed to add little or much (as funds allow) of what may be called decoration. The cost of repairs and some decoration is estimated at at least 5,000*l.* This sum the meeting pledged itself to endeavour to secure. Subscriptions may be sent to the London and Westminster Bank, 214, Holborn, or the senior churchwarden, Mr. T. H. D. Berridge, 49, Rutland-gate, S.W.

PARISH CHURCH RENOVATIONS, KINGSWOOD, BRISTOL. — At a public meeting held on the 8th inst. it was decided to carry out the plans for the full scheme of the Parish Church renovation prepared by Mr. E. H. Lingen Barker, of London and Hereford. The scheme embraces practically new nave, aisles, chancel, organ chamber, and two porches, and new floors and fittings. The floor of the western tower will be utilised as a choir vestry. The accommodation is for 675 worshippers.

EXTENSION OF CORPORATION BATHS, ABERDEEN.—On Monday last the Aberdeen Town Council resolved to extend the bathing-station at the sea beach at a cost of about 6,000*l.*, according to plans by Mr. John Rust, jun., City Architect. The additions include a swimming-pond, 100 ft. long and 40 ft. wide. The pond is to be placed under the present ground level to the south of the existing pavilion, and will be constructed at such a level as to fill by gravitation at high-water and discharge at low-water. The roof will be formed on steel girders and concrete arches, with cupola lights on the top above the level of the ground, and seats round the cupolas to protect them. There will also be twelve additional plunge baths, making twenty-eight in all. A proposal to add a suite of four rooms for Turkish baths was dropped.

BROAD SANCTUARY CHAMBERS, WESTMINSTER. —This block of offices, now approaching completion, is being executed for the directors of the Westminster Palace Hotel Company, at a cost of 10,000*l.* Messrs. L. Whitehead & Co. are the contractors. The fireproof floors have been supplied by Messrs. Homan & Rodgers; the heating and plumbing is carried out by Mr. William Dodds; the electric lighting by Messrs. Edmundson; the lifts by Messrs. Easton, Anderson, & Goolden, and the iron-work by Messrs. Starkie, Gardener, & Co.

MISSION HALL, ABERDEEN.—Plans have been lodged with the Burgh Surveyor for mission premises proposed to be built in West North-street for the Belmont-street Congregational Church. Messrs. Brown & Watt are the architects.

CONSERVATIVE CLUB, HEATON PARK, NEAR MANCHESTER.—On the 11th inst. the first sod was cut on the site of a new club-house which is to be erected in the Heaton Park district of Prestwich. The building, which is from the plans of Mr. Lodge, architect, will cost about 1,000*l.*

MISSION CHURCH, VRON, DENBIGH.—A new mission church was recently dedicated by the Bishop of St. Asaph at Vron. The church, which is dedicated to St. Alban, has been built of red brick. It is in the Romanesque style. The east end has a semi-circular apse. The roofs are covered with blue slate, capped by red ridges. Internally the church consists of nave 50 ft. by 26 ft. 6 in., chancel 16 ft. by 26 ft. 6 in. The porch is on the south side, and a vestry 12 ft. by 10 ft., with heating chamber under, on the north. A rood screen and rood of pitch pine extends the entire width of the west end of the chancel, and screens of similar design are placed to the north and south side of same, over the latter of which it is proposed to ultimately construct a small organ loft. The chancel stalls are also of pitch-pine, whilst inside the rail the altar is of panelled English oak, covered with a stone slab, and a small credence table and re-table of grey stone are fixed. The curved roof of the apse is plain, plastered with a view to future decoration. The church has been designed by Mr. Howel Davies, architect, Wrexham, and carried out by Messrs. Thomas Rogers & Son, builders, Brymbo.

NEW OFFICES FOR ABERDEEN PARISH COUNCIL. —The Aberdeen Parish Council have adopted the report of the Works Committee recommending the erection of new offices for the Council in Union-terrace. Plans have been prepared by Mr. A. Marshall Mackenzie, A.R.S.A. The structure will have a frontage to Union-terrace of 68 ft., and the front elevation will be 55 ft. from the street level. In the basement floor charter-room accommodation will be provided, and provision made for cellarage and heating apparatus. The ground floor is entered from Union-terrace by a flight of four steps. To the right is the chief inspector's room, orphan inspector's office, and clerks' room; while to the left are situated the office of the first assistant inspector, the strong-room accommodation and rooms for the outdoor inspectors, medical officers, &c. On the first floor is a collectors' office, a room for the Sheriff-officer, cloak-rooms, and a store for the clothing required for the outdoor poor, and a small committee room. The Council chamber, which measures 48 ft. by 36, is on the second floor. There are a chairman's room, cloak-rooms for ladies and gentlemen, and a committee room immediately adjoining the Council Chamber. The elevation to Union-terrace will be of grey granite. Exclusive of furnishings the offices are estimated to cost 6,000*l.*

BAPTIST CHURCH, CHISWICK.—A new Baptist church in Annandale-road, Chiswick, has just been opened. Accommodation is provided in the church for 493 adults, or for a mixed congregation of 625 persons, and in the schools and classrooms for 300 children. The buildings consist of church, assembly room, two vestries, and five classrooms, with lavatories, &c. The building is of brick, with stone dressings, and the internal fittings are of pitch pine. The architect was Mr. John Wills, of Derby, and the builders Messrs. Steward & Son, of Wallington.

CHURCH EXTENSION, NEMPNETT, NEAR BRISTOL.—On the 10th inst., the parish church at Nempnett was reopened after alteration, &c. The church as it existed before the recent alterations had a chancel communicating with the nave by a pointed arch, and having in its east wall a single coloured window with "The Resurrection" as its subject. The scheme just completed has involved the removal of the chancel with the arch, and has resulted in the erection of a larger chancel, carried up to the height of the nave, but separated from it by a carved rood-screen. Besides this, on the north of the new chancel, has been built a side chapel, or vestry. In the erection of this vestry a large part of the stone of the old chancel has been used; the archway which joins it to the chancel is the old chancel arch again set up. The new chancel is built of local stone. Dundry stone has been used as dressings. Two side lights have been added to the east window, the subject of one being Moses uplifting the serpent, and that of the other Abraham about to offer up his son Isaac as a sacrifice. The alterations have been carried out from the designs of Mr. Buckle, by Mr. John Flower, Diocesan Architect.

OFFICES, LANCASHIRE INSURANCE CO., BIRMINGHAM.—New offices for the Lancashire Insurance Company have just been erected at the corner of Bennett's Hill and Waterloo-street. The architect is Mr. J, A. Chatwin. The site is that formerly occupied by the Inland Revenue Office.

LYCEUM THEATRE, SHEFFIELD.—Plans for the alteration of City Theatre, Tudor-street, Sheffield, have been prepared by Mr. W. G. R. Sprague, of London. One of the chief external alterations of the theatre (which is to be called the Lyceum) will be at the corner of Arundel-street, where a tower will be erected. The main entrance will be at this point, and near will be a crush-room. The frontages abutting on Tudor-street and Arundel-street will be treated with Portland cement. The present exits will be retained, and in addition several others constructed. The construction of the auditorium will be of steel or iron, encased in concrete. The main roof over the auditorium will also be of steel or iron and concrete, overlaid with asphalte, and the new floors will be of similar construction. In the new entrances, exits, and corridors, granite-cement will be used, and the staircases will be of ample width, and arranged so that there will be no necessity for winders. The building is to be fitted throughout with electric light, in addition to gas. Retiring-rooms for ladies and gentlemen, as well as lounges, will be provided on each floor. The pit lounge will be in the basement. The ground-floor will be laid out for the pit proper and pit-stalls, the stalls being approached from the dress-circle entrance. The pit will have separate entrances and exits. The stalls are to accommodate 112 persons, and the pit 550. The circle is to be divided, the front portion being the dress-circle proper, and containing 142 seats. The back part, which will have a separate entrance, will be known as the balcony, and will seat about 160 people. The gallery will be entirely re-arranged. It will be capable of accommodating 650 persons. The private boxes will be made to seat 32 persons. The crush-room and principal vestibules will be at the Arundel-street corner of the building. Outside the theatre a covered glass awning is to be erected at the central entrance, and also at the side entrance in Arundel-street. The cost of the alterations will be about 15,000*l.*

CHAPEL, HAZEL GROVE, CHESHIRE.—On the 8th inst. the new Primitive Methodist Chapel, London-road, Hazel Grove, was opened. The building is of brick, with stone facings. The interior of the chapel is 60 ft. long and 30 ft. wide. A portion has been partitioned off for use as a Sunday school or for meetings. The executors of the late Mr. Wild were employed to carry out the building work, and Messrs. Pierce, of Stockport, were the architects.

INKPEN CHURCH, HUNGERFORD, BERKS.—The ancient church of St. Michael and All Angels at Inkpen, which has been in the hands of the restorers for over twelve months, was recently re-opened. The works have been carried out by Messrs. George Elms & Son, contractors, of Benham, Newbury, under the direction of Mr. Clapton Crabbe Rolfe, architect, of Oxford, and formerly of Reading. The new carved oak rood screen has been constructed almost entirely of oak grown upon the estate at Inkpen. This work is by Messrs. Harry Hems & Sons, of Exeter.

WESLEYAN CHAPEL, MOUNTSORREL. — The memorial stones of the New Wesleyan Chapel at Mountsorrel were laid recently. The church is placed 30 ft. back from the road, and is 52 ft. by 31 ft. 4 in. inside and 38 ft. 7 in. across the transepts. It will seat 263 adults. or a mixed congregation of 350 persons. In front there is an outside porch. At the rear there is a chancel and an organ chamber. There are also porches connecting the church with two vestries. The church is built of brick, and the front is faced with granite. The schoolroom is at the rear of the church, 40 ft. by 26 ft., and will seat 200 children. There is also a class-room and infants' room, and provision for extension by the addition of nine rooms. The architect is Mr. John Wills, of Derby, and the builders are Messrs. Scurr, Jowett, & Co., of Barrow-on-Soar.

NEW SCHOOLS, BIRKENHEAD.—At the last meeting of the Birkenhead School Board Mr. T. W. Cubbon, of Birkenhead, was appointed architect for new school buildings to be erected in Well-lane, at the south of the borough.

HOSPITAL, ARMAGH LUNATIC ASYLUM, IRELAND.—The new detached hospital at Armagh Lunatic Asylum is planned to accommodate one hundred and fifty patients under special treatment, together with the necessary attendants and staff. The general arrangements of the buildings are, viz.: —A central block, arranged for administration, with apartments for officer in charge; visitors' rooms (male and female), a dining-room in the centre, with kitchen, servery, scullery, stores, &c., &c. From this central block there are corridors, 17 ft. wide, extending right and left to the wing buildings, which are at the east and west extremities. From the north walls of these corridors are communications with the bathrooms, lavatories, linen closets, storerooms, shoerooms, and sanitary conveniences; also a stair to each wing, leading to the dormitories and rooms on the first floor. The wing buildings are situated at the extremities of these corridors and day-rooms. Extending towards the south are infirmary day-rooms and dormitory combined, for the reception of patients who are too weak to move from their beds. Extending towards the north of the wing buildings are a number of single rooms, a padded-room for each wing, and an associated dormitory on the ground floor for epileptics. At the extremities of each of these male and female wing buildings there is a small separation hospital ward, with nurses' quarters, &c., all isolated from the rest of the buildings. Armagh limestone has been used for external walls and ashlar works. All the outside walls have brick lining, and a hollow space between the main wall and the brick lining. The staircases are all fireproof and with concrete steps, fitted with Mason's treads. The ventilation and heating is arranged by Musgrave & Co. on the plenum system. The buildings have been carried out by Messrs. M'Laughlin & Harvey, of Belfast—from the plans and under the supervision of Messrs. J. J. Phillips & Son, Belfast.

NEW CHURCH, DARNCONNAR, AYRSHIRE.— The new church at Darnconnar, in Auchinleck Parish, has just been opened. The church has been built from designs by Mr. R. S. Ingram, Kilmarnock, and is in the Gothic style. The outside walls are of Ballochmyle red sandstone, while inside white Kilwinning stone has been used. The interior has an open timber roof, and is heated by means of hot-water pipes. There is accommodation for about 300 worshippers. A manse adjoins the church. The whole building cost about 3,000*l.*

SANITARY AND ENGINEERING NEWS.

WATER SUPPLY, MILVERTON.—These works were opened on the 1st inst. They were designed by Messrs. Taylor & Crimp, of Westminster, the contractors being Messrs. Tabor & Hinchcliffe, of Cambridge.

SKELTON AND BROTTON SEWERAGE. — At a recent meeting of the Skelton and Brotton Urban District Council it was reported by the engineer that the scheme of main sewerage and sewage disposal had been completed by the contractor, Mr. J. Carrick, of Durham, within the time allowed by the County Court order. About twelve months ago an injunction was obtained from the Court by the Saltburn Urban District Council to prevent the pollution of the Skelton Beck, which flows through the pleasure gardens at Saltburn. After an inquiry of the Local Government Board by the late Mr. W. J. B. Clerke, M.Inst.C.E., whose sanction to a loan of 15,000*l.* was obtained, a start was made with the work which is now completed. The scheme is from the design of Mr. D. Balfour, M.Inst.C.E., of Newcastle-on-Tyne, and comprises about ten miles of 21, 18, 15, 12, and 9-in. fireclay and cast iron pipe sewers, with manhole and lamphole shafts, automatic flushing chambers, cast-iron valley crossings, &c. The fireclay pipe joints are made partly with Hassall's patent water-tight joint, and partly

with gaskin and cement. The work consists of a combined intercepting scheme for carrying the whole of the sewage from the ten villages in the district, which have a population of 10,000, to a point at the top of the cliffs on the coast at Cranedale Spout, where the cliffs, 200 ft. in height, have had a tunnel driven, with a gradient of one in two from the beach to the top of the same, and lined with bricks, in which are laid cast-iron pipes, connected by easy bends to the outfall sewer on the beach, which is carried 700 yds. out to sea. This sewer is of cast-iron, laid in a trench in the rock on the beach and embedded in concrete, cast-iron inspection chambers being placed on the outfall, and indicated by means of cast-iron posts. A large number of float experiments were made to ascertain the proper point of discharge, so that there could be no nuisance from reflux sludge, and ultimately a point to the north-west of Huntcliffe promontory, 700 yds. from the cliff, was decided on, being at extreme low water, and where it is found the sewage at all states of the tide is carried out to sea. The work has been completed for less than the engineer's original estimate.

PAIL *v.* WATER CARRIAGE SYSTEM, CHORLEY.—On the 9th inst. Mr. E. P. Burd, inspector of the Local Government Board, held an inquiry in the Chorley Council Chamber with regard to an application of the Council for a provisional order for sanction to borrow 10,000*l.* for purposes of converting the present pail system of closet accommodation to that of the water carriage system, and to so alter or amend the Chorley Improvement Act of 1871 as to enable them to do so. The Town Clerk (Mr. Wills) stated that the total indebtedness of the borough was 116,650*l.*, and the population was estimated at 25,000. He pointed out what had been done by the late Board of Commissioners, who adopted the pail system, and stated that application was made in 1890 to form a control depot for excreta in water, to obviate the vans going through the town, but it was refused by the Local Government Board, who recommended the adoption of the water carriage system. The Corporation, acting upon that recommendation, and under pressure from the County Council, spent 16 000*l.* in sewage precipitation works. The removal of the pails weekly cost 1,300*l.* a year, and the same amount to carry on the sewage works, and it was with the object of saving half that and for improving the sanitary condition of the borough that the Council decided upon the conversion. They offered to do the work of connexion with the sewers if the owners of property found the material. Councillor J. W. Stone spoke of the advantage that would accrue to the town. The Borough Surveyor and Medical Officer also gave evidence. Mr. Kelville, solicitor, appeared for a number of property owners, and called evidence in opposition to the scheme, as being one of a most expensive character, and likely to prove ruinous to many owners of old cottages.

SEWAGE DISPOSAL, WORCESTER.—For the premiums offered by the Worcester City Council for the best scheme of sewage disposal for the city, there are twenty-two competitors who have sent in designs and plans, and these are now under examination by Mr. Chatterton, the assessor appointed by the Council.

LOCAL SEWERS, LONDON.—The Main Drainage Committee of the London County Council have sanctioned, subject to a condition recommended by the Engineer, the construction of local sewers as follows—Hampstead: 750 ft. of 12-in. pipe sewer in proposed new road, between Haverstock Hill and Lawn-road. Fulham: 950 ft. of 12-in. pipe and concrete sewer in proposed new road, to be called Fitz-George-avenue, between Auriol-road and North-end-road. Plumstead: 80 ft. of 9-in. pipe sewer in Kirk-lane, 230 ft. of 12-in. ditto in Palmerston-road, and 200 ft. of 12-in. ditto in Plum-lane. St. Saviour's: 420 ft. of 12-in. pipe and concrete sewer in Park-street.

FOREIGN.

FRANCE.—The ancient church of St. Pierre on Montmartre is to be demolished in a few weeks, on account of the dangerous condition of the building. It is to be replaced by a new church, of which M. Baudot will probably be the architect.——The New Salon will open this year, at the Champ de Mars, on April 23, and close on June 30. The old Salon will open on April 25, at the Palais de l'Industrie. ——A certain number of the painters who call themselves "Symbolistes," most of whom have already taken part in the "Rose Croix" exhibitions, have organised, at the Georges Petit Gallery, a special exhibition under the title "L'Eclectique." Among the members are MM. Asségat de Bouteyre, Maurice Chabas, and Darras.——The sale of Chinese and Japanese *objets d'art* from the Goncourt collection has realised 236,676 francs. The total amount realised from all the departments of the sale was 1,162,952 francs.——At Versailles the Salle des Etats Généraux, which has been closed for many years, has just been reopened to the public. There have been placed there, among other works, the "Combat de la plâtrière" by De Neuville, and the "Charge de Reischoffen" by M. Aimé Morot. There is also to be seen there a picture hitherto unknown to the public, representing the interview between Napoléon and the Emperor Alexander on the Niemen.——The exhibition of models for the monument to Pasteur which is to be erected at Dôle is now open in the *foyer* of the theatre there. Fifteen designs have been sent in.——The bell-tower of the church at Monprimblanc, near Bordeaux, has been blown down in one of the recent gales.——The Department of Fine Arts has addressed a circular letter to all the Prefects of Departments in reference to the repair of works of art which have been placed by the State in the various provincial museums. As a good deal of mischief has been done by incompetent repairs or restorations, the Department from this time will take all such work under its own direction; the municipal authorities and curators of museums are to confine themselves to notifying to the Government what repairs are wanting to any works in their charge.——The French Government is about to establish a railway in Madagascar.——It has been decided that the statue of Beaumarchais, the work of M. Clausade, is to bei naugurated on April 27, the anniversary of the first representation of "Mariage de Figaro."——The monument erected at St. Maurice to the memory of Delacroix is to be inaugurated in May next.

GERMANY.—According to the report of the Association of Ground Landlords at Berlin there has now been a considerable increase in the building activity throughout the capital, whilst the number of houses and tenements standing empty has decreased. There has been too large a supply in comparison with the demand for tenements during the last few years, but this has now been remedied.——The national memorial to Emperor William will be practically ready for the celebration at the end of the month.——The new General Post Office at Berlin is now almost complete, for the galleries to be devoted to the Post Office museum are also out of the hands of the builders. The collections will be housed in a large central hall surrounded by galleries. Plans and elevations of the leading post-offices throughout Germany will be exhibited.——The new "Potsdamer" bridge at Berlin is to be taken in hand at once, and the plans have been laid before the Emperor.——The new models for the Helmholtz monument are now exhibited at Berlin. The selection for the commission rests between the sculptors Herter, Otto Lessing, and Janensch.——Further important improvements are to be made on the west façade of the Royal castle at Berlin, and Professor Otto Lessing has been commissioned to execute a number of historical semi-reliefs for panels which are empty at present.——The memorial church to Emperor William, which was inaugurated in Berlin with considerable ceremony, was not complete on that occasion. Various pieces of sculpture are now being prepared, and these will be put in position shortly. Among the more important works will be statues of Luther and Melanchton. by Professor Otto Lessing.——The *National Zeitung* of Berlin has published an important article on competitions for sculpture, as the many competitions for memorials and monuments are giving rise to serious complaints among artists generally. Sculptors in Germany consider that the expense connected with the preparations of large-sized models is quite out of proportion to the premiums generally offered, and it is proposed to increase the number of premiums considerably above the three or four now generally given.——Elaborate street decorations are to be made in connexion with the festivities which will take place at Berlin on the anniversary of the Emperor William's birthday, and the City Architect, Herr Ludwig Hoffmann, has been entrusted with the supervision of this work.——A number of improvements are to be made on the leading high roads running out of Berlin. The first thoroughfare to be taken in hand is from Schoeneberg to Steglitz. A broad avenue is to be formed with a roadway 65 ft. wide. The cost of the improvement is 20,000*l.*——The Arts and Crafts Museum at Berlin is repeating its very practical arrangement of organising a special exhibition of objects obtained during the last six months.——A number of minor competitions have been opened in connexion with the Horticultural Exhibition at Hamburg, which will be held this year. Premiums will be offered for the best designs for garden furniture, verandah fittings, flower-boxes, &c., with the view of encouraging better taste in connexion with gardening.——Altona, near Hamburg, is to have a new museum, and a number of premiums have been offered in connexion with the competition to be held for the design. There will be four premiums of 150*l.*, four of 100*l.*, and two of 50*l.*——We understand there will be a machinery exhibition at Munich during 1898, and a competition has been held with a view of obtaining suitable designs for laying out the grounds and erecting the necessary buildings on the banks of the River Isar.——Preparations are already being made by the German Government for a thoroughly representative collection at the Paris International Exhibition of 1900. One of the first committees formed is that of the Arts and Crafts section, and all the leading men connected with the Arts and Crafts movement have been elected to serve, including Baurath Ihne, Baurath Heydn, Baurath Kyllmann, and Herr Hoffacker, among Berlin architects.——The premium known as the Schinkel Studentship has been awarded to Mr. Hausmann. There were sixteen candidates, and the subject was "A County Hall." Three of the designs were also honourably mentioned. The subject of the Engineers' Competition arranged under similar auspices by the "Arkitekten Verein" was "A Local Railway," and the premium has been awarded to Mr. Schimpff.——Active preparations are being made in Berlin for the ceremonies which will be held during the next few days, and particularly for the celebration on the 22nd. Nearly all the public bodies are commemorating the event in some particular form, and the Academy of Arts will hold a special public meeting on the 20th, on which day the Art Exhibition, representing the work of the last hundred years, will be opened. On the 22nd inst. there will be a great popular procession, for which the central feature will be a triumphal car representing "Germania." On the 23rd inst., we understand, there will be a further small historical procession, arranged by the artists of Berlin. The decorations throughout the streets are progressing rapidly under the supervision of the City Architect.

AUSTRIA AND HUNGARY.—A lecture on the new street improvements at Vienna was recently given at the Architects and Engineers' Society of the capital by engineer Riehl, in which the programme of the Improvement Committee was explained.——The old exhibition grounds at Vienna are not considered to be sufficiently extensive for the large number of exhibits which are to be sent in for the exhibition of 1898, and it is hence probable that they will have to be extended, and part of the public grounds of the Prater park used.——The municipality of Vienna will be building a chapel of considerable dimensions at the central cemetery of the town.——Owing to the closing of the "Hofburg" theatre for alterations, the idea of having a new Court Theatre, devoted entirely to chamber plays, is again the subject of discussion, and it is not unlikely that the Emperor will encourage the scheme.——A number of temporary bridges are being constructed at Vienna in connexion with the laying of the new Metropolitan railway.——It is not unlikely that the Municipality of Vienna will found a new municipal bank for which the necessary buildings may have to be taken in hand shortly. The buildings of the Alland Sanitorium are progressing rapidly, and it is probable that they will be ready by the end of the year.——The Municipality of Vienna has decided not to encourage private enterprise in respect to laying new tramways, as they propose taking all this class of work in hand themselves. It is for this reason that several schemes put before the authorities by private companies have not found favour.——A new suburban theatre is to be erected at Vienna with a view of furthering the party interests of certain municipal politicians, and considerable subscriptions have been raised for this purpose.——One of the large labourers' accident insurance companies is having some artisans' dwellings erected at Trieste and has voted 100,000 florins towards this purpose. It is the intention of the company to see if artisans' dwellings can be made a comparatively profitable investment in that town.——The well-known Hungarian summer resort Pistyan is to have some extensive baths, which are being erected for the coming season.

MISCELLANEOUS.

LYCH GATE, PENWORTHAM CHURCH, LANCASHIRE.—A lych gate has recently been erected at Penwortham Church to the memory of the late Wm. Adam Hulton and his wife Dorothy Ann. The structure is from designs by Mr. A. T. Nutt, architect, Windsor, and has been carried out under the supervision of Mr. W. Morley. It is of Gothic design The carved work has been executed by Messrs. H. Miles & Son, Lancaster.

THE INSTITUTE OF SANITARY ENGINEERS.—Mr. William Spinks, Assoc.M.Inst.C.E., Lecturer on Sanitary Engineering, Yorkshire College (Victoria University), has been elected President of the Institute of Sanitary Engineers for the ensuing year. The membership of the Institute now numbers over 460.

PROPOSED FEDERATION OF MASTER BUILDERS' ASSOCIATIONS.—A meeting was held at the offices of the Bristol Master Builders' Association, Guildhall, Bristol, on the 10th inst., for the purpose of considering the question of the formation of a federation of the master builders' associations in the West of England and South Wales. Mr. A. Krauss, President of the Bristol Association, who was elected to the chair, said the subject of a federation for the district was first broached to him by Mr. Rider, of London, the Chairman of the National Association of Master Builders of Great Britain, at the last half-yearly meeting of that Association, held a short time ago at Blackburn, and acting upon that suggestion, he had taken the liberty of calling them together that day to consider the matter, and he trusted that something practical would be the outcome of the meeting. After the rules governing a similar federation now existing in Lancashire had been read, a long discussion ensued, in which all present took part, and eventually Mr. James E. Turner (Cardiff) moved, and Mr. E. J. B. Mercer (Bath) seconded, and it was resolved unanimously, "That it is desirable to establish a master builders' federation of the associations in the various towns and localities in the West of England and South Wales." The next resolution put forward was, "That such federation be organised upon the lines of the Lancashire Federation." This was moved by Mr. W. M. Blackburn (Newport), se-

conded by Mr. H. J. Spiller (Taunton), and carried *nem. con.* Mr. James E. Turner (Cardiff) then proposed, and Mr. George Humphreys (Bristol) seconded, "That the delegates meeting here to-day report to their associations the principles adopted at this meeting, and that the rules of the Lancashire Federation be forwarded to the secretaries of the various associations invited here for their guidance in the matter, with a request to report the views of their associations thereon to the convener of this meeting at an early date, with the view of another meeting being called as soon as possible." This resolution, on being put to the meeting, was carried unanimously. The meeting closed with a vote of thanks to Mr. Krauss.

COURT OF COMMON COUNCIL.—On the 11th inst. a meeting of the Court of Common Council was held at Guildhall, the Lord Mayor presiding. Replying to a question, Mr. Deputy Sayer, Chairman of the Gresham Committee, said that the ambulatory of the Royal Exchange would shortly be decorated by a fresco by Mr. Seymour Lucas, A.R.A., depicting "William the Conqueror giving the Charter to the Citizens," which the Corporation had commissioned. The Mercers' Company had commissioned Mr. E. Crofts, A.R.A., to paint a panel of "The Opening of the First Royal Exchange by Queen Elizabeth." Sir Samuel Montagu, M.P., had commissioned Mr. Solomon J. Solomon, A.R.A., to paint a panel of "Charles I. Demanding the Surrender of the Five Members at the Guildhall," and Mr. Carl Meyer had ordered Mr. Sigismund Goetz to paint "The Offer of the Crown to King Richard at Baynard's Castle." After a long discussion it was resolved, at the instance of Mr. Alderman Treloar, to open the forthcoming loan exhibition of pictures at the Art Gallery at Guildhall on Sunday afternoons.

FONT FOR THE OLD CHURCH, ARBROATH.—It is stated that a presentation is to be made to the Old Church in the form of a baptismal font of alabaster, which will be placed in position at an early date. The font is from a design by Mr. Burnett, A.R.S.A,, architect of the Old Church.

CENTRAL ASSOCIATION OF MASTER BUILDERS OF LONDON.—Mr. William Shepherd has been elected President of this Association for the ensuing year. Mr. J. B. Greenwood and Mr. Thomas Gregory are elected the Vice-Presidents, and Mr. Charles Wall, Treasurer.

GREEK HISTORY AND MONUMENTS.—Professor Percy Gardner delivered the second of his course of lectures on "Greek History and Extant Monuments" at the Royal Institution last week. He dealt mainly with the Athenian Acropolis as a background of history, starting from the devastation of the Acropolis by the Persians in 480 B.C., and working backwards. The lecturer dwelt on the account given by Herodotus of the Persian occupation, which resulted in the Athenians abandoning their city to the ruthless vengeance of the invaders, to whom nothing was sacred. The evidence of the historians could now be supplemented by the yet more truthful records on rock, marble, and bronze, for recent excavations brought the monuments of old to light and completed the tale of the wreck of all works of interest and beauty by the Persians and the consequent restoration of Athens. When the Athenians returned they had lofty ideas and plans, and intended to replace the old buildings with grander ones of marble. Modern excavations enabled us to recompose temples, to set up votive images, sometimes even on their own pedestals, and to trace the development of Athens from century to century. When the Persians razed the Acropolis they were probably unaware of the existence of any earlier monuments than those which they were destroying. We now know that the history of Athens began at a period that was as remote to Herodotus as his time was to ours. Recent excavations revealed to us successive phases of the history of the capital of Greece. The earliest stratum showed house walls, graves, and terra-cottas; the second, Mycenæn pottery and palace walls, and the house of Erechtheus known to Homer; the third took us to the period when the Kings gave way to Athena and the Acropolis was made sacred to the gods. The Greeks gave the name of the Pelasgic age to all the early monuments that they could not assign to any definite period. Professor Gardner then attempted to reconstruct ancient Athens at different periods. The first fixed historical landmark was the age of Pisistratus. Before his time the Acropolis was still a fortress. Pisistratus erected a temple, or the Acropolis, in honour of Athena, and some walling built by him on the road up to the temple still remained. The ground plan and style of the Peisistradid Temple were now quite apparent. In the Age of the Tyrants the early temples were of limestone, and it was not till about 600 B.C. that the age of stone gave way to the age of marble. Pictures of various pediments, the low gables which crowned the fronts of the buildings, were thrown on the screen, and the restorations suggested by archæologists shown. These showed the fondness of the sculptors for monstrous forms, to which they were more inclined owing to the form of the pediment, which suggested to the artist the displayal of serpents and monsters. The lecturer then went on to speak of the discovery by Studniczka of the design and part of the substance of the pedimental group erected by Pisistratus over the doors of the Temple of Athena. Professor Gardner said that within the last few days a young German student had followed up these discoveries, and had reproduced the design of the whole of the figures in the pediment.—*Daily News.*

CAPITAL AND LABOUR.

THE BUILDING TRADE DISPUTE AT BLYTH.—The dispute between the Blyth bricklayers and the master builders, which commenced on January 12, has been terminated. Mr. John Hood, the secretary of the Blyth Branch of the Operative Bricklayers' Society, received a communication from the Blyth Master Builders' Association stating that the demand for a reduction from 9½d. to 9d. per hour would be withdrawn. It was in consequence of this demand and a notice of certain alterations in the working rules that the bricklayers came out. The code of working rules remains the same with this exception, that instead of an unrestricted number of apprentices, as heretofore, no more than one apprentice to every four bricklayers will be allowed, the number of apprentices engaged by any one firm not to exceed four.

LABOUR IN THE BUILDING TRADE DURING FEBRUARY.—According to the *Labour Gazette*, employment in the building trades has improved. The percentage of unemployed in unions making returns for February was 2·0, compared with 2·4 in January, and 2·5 per cent. in February, 1896. Six disputes occurred during the month, involving 334 workpeople. Most of the disputes have been settled.

LEGAL.

THE CLAIM AGAINST THE ST. PANCRAS GUARDIANS.

JUDGMENT.

MR. RIDLEY, Q.C., the Official Referee, delivered a considered judgment in this claim on the 17th inst. It will be remembered that the plaintiffs, the trustees of creditors of Mr. William Brooks, a builder and contractor of Folkestone, sued the Guardians of the Poor of St. Pancras, and their architects, Messrs. A. & C. Harston, for a balance of 24,226*l.*, or, alternatively, 24,262*l.*, alleged to be due on a contract for the completion of the St. Pancras workhouse. The plaintiff's case was that some years ago the Guardians resolved to reconstruct the workhouse in King's-road, and appointed Messrs. Harston as their architects. The contract for the work was at first taken by Messrs. Kirk & Randall, of Woolwich, but disputes arose, and in 1892 that firm requested to be relieved of further work under the contract. Fresh tenders were then invited for the unfinished work, and that of Brooks was accepted for 50,861*l.* The work was to occupy fifteen months from May, 1892, but delays arose, and in November, 1894, the work was stopped. Messrs. Drew Bear, Perks & Co., of Queen Victoria-street, who supplied the ironwork; Mr. H. Tolputt, of Folkestone, who supplied the timber; and Mr. J. Brown of Cannon-street, who supplied bricks, sued on behalf of creditors for the balance alleged to be due to Mr. Brooks. The net cost of the work executed was stated to be on the first claim 65,479*l.* plus 10 per cent. profit, 6,547*l.*, making 72,026*l.*, of which 47,800*l.* had been received under the architects' certificates, leaving a balance of 24,226*l.* In the alternative claim the net cost of the work executed was estimated at 65,479*l.* as before, but the 10 per cent. profit was reckoned on the contract price of 50,861*l.*, which with other amounts claimed brought the alternative claim to 24,262*l.* The plaintiffs alleged that Brooks was hindered from continuing and completing the contract by the action of Mr. George Poole, the clerk of the works, who interfered without sufficient cause and condemned materials supplied wholesale. It was also further alleged that the architects were seldom on the works, and that the interference of the clerk of the works caused needlessly a net loss to Brooks of 2,526*l.*, in addition to 193*l.*, the value of the materials left by Messrs. Kirk & Randall, and not permitted to be used. The defendants generally denied the charges against the clerk of the works, and alleged that Brooks had not carried out his undertaking to complete the work left unfinished by Kirk & Randall. The Guardians further relied on the Public Authorities Protection Act, 1893, as being a defence, inasmuch as the matters referred to in the action occurred more than six months before the action was brought. Messrs. Harston, the other defendants, pleaded that they were not liable, and said that they had received no complaints from Poole with respect to the manner in which the works were being carried out by Mr. Brooks. Upon the conclusion of the evidence called on behalf of the Guardians, however, the learned Referee decided that, as the plaintiffs had failed to make out that Messrs. Harston had been guilty of fraud, dishonesty, or collusion, those gentlemen were entitled by law to judgment; but he reserved the question of costs. Reports of the case have appeared in the *Builder* of November 21 and 28 and December 5, 1896, and January 23 and 30 and March 6 and 13 last.

Mr. Reginald Bray and Mr. A. A. Hudson appeared as counsel for the plaintiffs; Mr. English Harrison and Mr. W. Moyses for the Guardians; and Mr. McIntyre and Mr. R. W. Turner for the architects.

The learned Referee, in giving judgment, said that the case was a remarkable one in some respects, first of all in the details which had to be considered, and secondly in regard to the circumstances of the contract itself and all the incidents which arose during the performance of the job in question. In the course of the case the question arose as to what was the position of the architect, and he (the learned Referee) gave his opinion that he could not do otherwise than absolve him from the consequences of the action on the ground that there was no evidence that he had been guilty of fraud, dishonesty, or collusion, and therefore that the action was not maintainable against him. That was still his opinion, and Mr. Harston was entitled to the full benefit of it, but he was bound to say that he felt most strongly that the decisions given by Mr. Harston as arbitrator under the contract were not capable of justification. He accepted, however, Mr. Harston's word on oath that in doing what he did, he acted to the best of his ability as arbitrator under the contract. Mr. Harston had stated that in his opinion it would not have been fair if any other arbitrator had been appointed under the clause contained in the contract. He (the learned Referee) did not understand that. Unfair to whom? Certainly not to the builder. Then was it unfair to the Guardians? Not at all, unless they had a right to expect from Mr. Harston a more favourable decision than they would expect from somebody else who was in an independent position. Then was it unfair to Mr. Harston? Certainly not, unless he was afraid of the judgment of an independent arbitrator on his specification. He left the question of Mr. Harston there and would proceed to direct himself to answer the questions suggested by Mr. Bray, on behalf of the builder and his trustees, and whether or no they were entitled to recover from the Guardians anything beyond the contract price which was stated in the contracts, adding, of course, the payments which might be allowed for extras on the orders given by the architect. It was clear, he thought, that the Guardians were not liable to pay the plaintiffs in respect of damages due to any acts of the arbitrator, unless they interfered in the matter and induced him to give decisions in their favour. If they did that, that would be in a way collusion between the Guardians and the architect, of which, as he had said, there was not any evidence in that case. It was perfectly clear to his mind that the Guardians, through their Building Committee, acted properly in the matter; abstained from interfering with the architect, accepted his decisions, and relied on him. He did not think it was true that Brooks or Fearon never complained to them. That they did not recollect it, he would accept, but he thought on the balance of evidence the fact was that they did complain on certain occasions.

The learned Referee referred to the decision of the late Mr. Justice Mellor in the case of Roberts *v.* Bury Improvement Commissioners, given in 1870, and upheld by the Court of Appeal, reported in Hudson's Law of Building Contracts, in which it was held that, where undue interference by the architect in his capacity of arbitrator delayed the performance of the contract by the builder, the builder had no remedy against the employer or the architect except in the case of collusion between them (which was not shown in the present case), but where the duties of the architect were those of agent, his defaults were those of his employer. The learned Referee said that he felt bound by that decision on that part of the case. But Mr. Bray, however, had said that, apart from the conduct of the architect, apart from the fact that the Guardians never interfered, there still might be a liability on the Guardians, if independent of that, either by their default the contractor was not put in a position to perform, or was prevented from performing, the contract, or without that default circumstances had arisen which made it impossible for him to carry out the contract. It might be that things might happen which in the result would occasion a totally different state of things than those intended. Was that so in the present case, and if so was it caused by the default of the Guardians? He had to be a little careful about that because Mr. Harrison had very strenuously contended throughout the case that his clients were without any blame in the matter. It was, therefore, his duty to go very carefully into the matter before arriving at a decision. Having done so, he had come to the conclusion that the most important thing to be noticed was the delay in giving the contractor possession of the site. After carefully considering all the conditions of the contract together, he was of opinion that the contractor had a right to immediate possession of the site. He would not say that the contractor would have had a right to complain to the Guardians in respect of trifling matters as if some of the inmates of the workhouse had still remained, but he thought it was the duty of the Guardians to give immediate possession under the contract. The contractor, however, got possession of the site piecemeal. He got possession of C block at the beginning of July, of B block on two different occasions early and late in August, of H block in August and September, of K Block on February

21, 1893, and of A Block either in March of that year or in June—in March according to the defendants' case; in June according to the builder's case. Was it the builder's fault that he did not get possession? On the defendants' behalf it was argued that it was his fault, and that he had nothing to do but to say he would have it, and he would have had it. After referring to the evidence of Mr. Millward and Captain Miller on this part of the case, the learned Referee said that he did not think there was any cause of complaint as to Fearon not commencing the work. Poole's diary said nothing about the default of the contractor in taking possession. Then came the period when the builder was broken and the creditors took up the job. That was on April 19. At that time one would expect the subject to be discussed, as the fifteen months, within which time the work was to have been completed, was far advanced. If, for instance, Mr. Harston really thought that it was the fault of the builder in not taking possession, it was easy for him to say so to the Guardians or the trustees, but he did not do anything of the kind, but wrote a letter to the trustees in which he said, "I am very pleased to hear you have tided over the difficulty." In the present case he (the learned Referee) could not understand how it could be for the benefit of Brooks, Fearon, or the trustees to make delays. If anyone found a man scamping the work and putting in bad stuff, they would think naturally that a man who did one thing badly would do another thing badly, and that they had got a man who did not know his trade. It was therefore important to see what really had taken place. He (the learned Referee) was aware that there were two or three bad bits of wood in the roof of the workhouse, because he had seen them He was aware that some of the flooring boards downstairs had warped, and would not fit. He thought he saw about six. He also might mention the fact that one piece of brickwork in the wall at the back of Block H—the last bit finished—was somewhat inferior work. He remembered also that in one of the dwelling-rooms there was a sappy board or two, but otherwise the job was a very good job, even that in the rejected columns, of which they had heard so much. He could not help thinking it was a good building for the purpose, and he hoped it would be found so.

The learned Referee said that Poole did not fail in taking objections to materials, but when all was said and done he did not believe he got better bricks on the job by so doing. He thought that where so many objections were taken, and so much material was rejected, that an architect ran the risk that the builder would somehow or other escape observation, and put in some work which would not pass, in order to make himself right in the contract. He, however, did not find that in the present case, although he should have expected that with a too strict architect the work somewhere would become scamped. Was it not a fair deduction to make upon the evidence on that part of the case that it was not Fearon or Brooks who was in default for not commencing the work at the proper time, but the fault of the Guardians, or of those who represented them? The other breaches of contract alleged had all some existence in fact, but none of them appeared to him to be of the same importance as the breach of the condition giving the contractor the possession of the site. The matter of the temporary entrance, the interference by workmen under other contractors made it difficult to complete the job. Again, the allegations as to Poole constantly making objections to the work, and constantly and arbitrarily interfering, made it almost impossible for the contractor to carry out the job. He would not go through the whole history of Poole. He had no doubt that Poole condemned the first consignment of goods which came on the works in order to get a better article by so doing. As to the facing bricks he believed that Poole objected to every brick which came on the job in order to get a better one out of Fearon, and that was his guiding principle throughout. The learned Referee, in passing on to the alleged wholesale marking of bricks by Poole on C block said, that nobody could believe that Poole did not lose his temper on that occasion. Poole, he considered, was one of the very worst witnesses he had ever come across. He was not, however, prepared to hold that for everything Poole did the Guardians were responsible. He did not base the opinion he had formed on the case upon what Poole did, but he based it on the fact that by the deliberate failure to give possession of the site the Guardians had rendered it impossible for the contractor to perform the contract. On a large job like the present, where there were several buildings of magnitude to be erected, it was of the greatest consequence to the contractor that he should carry them on all together and do the work in a particular order, and when he lost that advantage during the first two or three months of the contract he could never regain it. The contractor could not utilise his labour or men by going from one place to another as he should have been able to do, the result being that his labour bill was increased. In those circumstances the materials were ordered before they could be used and had to be stored, and by the storage were damaged and rendered subject to rejection. In fact, the work which could have been done cheaply, if done at the right time, would necessarily cost more if done at the wrong time. He thought in the present case that the breach of duty on the part of the Guardians did absolve the contractor to a certain extent from the provisions of the contract, and in any case he was entitled to say that he would claim damages in respect of that breach of contract. If that state of things was right, the contractor would be entitled, it seemed to him (the learned Referee) to almost the same measure of damages he would get if he said that the contract was at an end, and he would sue for the value of the work done. He did not say it was precisely the same, but he could not make out what the difference was. In the present case there was no evidence on which he could rely to show what the work actually cost. He thought, however, that he might take it that it was very much in excess of the contract price. He did not think that it was less than 45 per cent. above the money expected to be spent on the contract. That was an enormous sum on such a job. He thought that Mr. Brooks, Mr. Fearon, and the trustees had done their best to get right materials. Some of the materials rejected ought not to have been rejected, and the contractor ought not, therefore, to be visited with any blame on that score. That being so, he thought the decision in the case ought to be in favour of the plaintiffs. But there was one further point to be considered. Mr. Harrison took the point that the plaintiffs acquiesced in the existence of the contract long after the breaches had arisen, submitted to be paid by the certificates of the architects, and as the contractor and the trustees had so elected to be bound by the contract, they could not then come and say that they were not so bound. He did not think that that argument applied. He did not see in what respect the Guardians had altered their position under the contract in consequence of the contractor having gone on. What would they have done if the contractor had acted otherwise? He did not know, and it was not necessary for him to determine that, because it appeared in the report of the case of Bush *v.* the Trustees of the Port and Town of Whitehaven, decided in 1888, and upheld on appeal, that the contractor in that case did the same thing, viz., he accepted the decision of the architect or engineer, and got the money under the contract, and the court held he was entitled to say "I have got all the contract gives me, but I am entitled to something more." He (the learned Referee) thought, therefore, he ought to follow the ruling of Mr. Justice Cave in that case, and for those reasons he was of opinion that there ought to be a judgment for the plaintiffs against the Guardians, and that there ought to be a judgment for the architects with costs. He had thought at one time that although Messrs. Harston had got judgment they ought not to have their costs, but he now thought that would be taking a stronger step than he had a right to take. He had expressly stated what he thought of what Mr. Harston had done; but he thought he should not be right in using the discretion which he had in saying they ought to pay the costs of having been brought there. He thought they must have judgment with costs, but that the Guardians must pay the costs of Mr. Brooks and the trustees. The amount as to which judgment against the Guardians should be entered must remain undecided, because he had not had the opportunity, and of course he had not endeavoured, to arrive at the precise sum. He thought it might require a rather exhaustive inquiry to find out what the damages were, and he hoped that whatever course the parties might take in arriving at a decision on this point, they would not find it necessary to go into another inquiry, but would be able to adopt a course which would not involve the necessity of more money being spent in costs. He decided that the contractor must recover something, and he hoped it would not be necessary to have an inquiry into that matter. If there were an appeal in the matter, the question would not arise unless his decision stood, and in that case he trusted it would not be necessary to have a further inquiry and a further expenditure of money. The learned Referee concluded his remarks by thanking counsel for the great assistance they had given him throughout the case.

Mr. Harrison said that he did not know whether the learned Referee had set aside the contract, or whether he was going to issue an inquiry as to the breaches. If the contract were to be set aside, of course his clients would like a little time to consider what they would do. It could not be a sort of double-edged inquiry where the question of damages was concerned. If the contract were to be set aside, the plaintiffs would be entitled to their *quantum meruit*.

The learned Referee said he thought the contract had been set aside; but if not, he could not make out what the difference in the damages was.

Mr. Harrison said that if that was so, and the learned Referee's decision was that the contract was set aside, he should ask him to formulate his judgment, and give his clients a few days to consider it, because, with regard to the *quantum meruit*, he thought the Guardians would like to take that further.

The learned Referee: By all means. I will give you a stay of execution.

Mr. Harrison asked the learned Referee to give his clients his decision in a formal shape.

The learned Referee: I will sign it and send it to the office. Of course I will do that. The shorthand writer will have taken down what I said.

Mr. Harrison: I am not going to ask you to write it out. I want something which I can appeal from at once. We can get the decision very soon.

Continuing, Mr. Harrison said that the contract being set aside was a very serious thing for the Guardians.

Mr. Bray: What I understand your judgment to be is that the contract is set aside, and we are entitled to *quantum meruit*, and if we are not entitled to that we are entitled to damages which have to be determined at a future time.

The learned Referee said that he should put in the formal judgment that he thought that the plaintiffs were entitled to substantial damages.

After some further discussion the learned Referee directed that judgment should be entered for the plaintiffs as against the Guardians with costs, the damages to be ascertained hereafter, and that judgment should be entered for Messrs. Harstons, the architects, as against the plaintiffs with costs. A stay of execution was granted for fourteen days to enable the Guardians to consider whether they would appeal from the decision.

POINT UNDER THE METROPOLIS MANAGEMENT ACTS:

CASE IN THE COURT OF APPEAL.

THE case of Appleyard *v.* the Lambeth Vestry came before the Court of Appeal, composed of the Master of the Rolls and Lords Justices Lopes and Chitty, on the 15th inst., it being an appeal by the defendants from the judgment of Mr. Justice Hawkins, in the Queen's Bench Division, in an action brought for a *mandamus* calling upon the defendants to repair and cleanse certain sewage or drainage pipes, which conveyed the drainage of four houses, the question for determination being whether the pipes in question were sewers, in which case the defendants would be bound to repair and cleanse them, or whether they were drains, in which case the owners of the houses would be bound to keep them in repair. By Section 250 of the Metropolis Management Act, 1855, the word "sewer" means and includes sewers and drains of every description except drains to which the word "drain" interpreted as it is in the section applies. The word "drain" means and includes any drain of and used for the drainage of one building only, or premises within the said curtilage, and made merely for the purpose of communicating with a cesspool or other like receptacle for drainage, or with a sewer into which the drainage of two or more buildings or premises occupied by different persons is conveyed; and shall also include any drain for draining any group or block of houses by a combined operation under the order of any vestry or district board." Section 112 of the Metropolis Management Act, 1862, extends the definition of "drain," so as to include "any drain for draining a group or block of houses by a combined operation laid or constructed before January 1, 1856, pursuant to the order or direction or with the sanction or approval of the Metropolitan Commissioners of Sewers." In the present case the houses were built in the year 1838, and the pipes were laid at the same time, and the drainage as then constructed remained till the present time. The drainage authorities at that date were the Commissioners of Sewers of Surrey and Kent. The Metropolitan Commissioners of Sewers were created in 1848 by the Statute 11 and 12 Vic., cap. 112. Mr. Justice Hawkins held that the pipes were not drains within section 112 of the Act of 1862, and were therefore sewers, and he decided that the plaintiff was entitled to the *mandamus* he asked for.

The Court, after hearing arguments by Counsel for the appellants, and without calling upon counsel for the respondent, upheld the judgment of Mr. Justice Hawkins and dismissed the appeal with costs.

Mr. Macmorran, Q.C., and Mr. Muir Mackenzie appeared for the appellants; and Mr. McCall, Q.C., and Mr. Morton Smith for the respondent.

MEETINGS.

FRIDAY, MARCH 19.

The Architectural Association.—Mr. J. A. Gotch on "Eighteenth Century Work." 7.30 p.m.

SATURDAY, MARCH 20.

The Architectural Association.—Spring Visit to the Building Trades Exhibition, Agricultural Hall. 3 p.m.

Sanitary Institute (Demonstrations for Sanitary Officers).—Inspection at Friern Barnet Sewage Works. 3 p.m.

British Institute of Certified Carpenters (Carpenters Hall).—Visit to the Building Trades Exhibition, Agricultural Hall. 6 p.m.

MONDAY, MARCH 22.

Society of Arts (Cantor Lectures).—Professor W. Chandler Roberts-Austen, on "Alloys." II. 4.30 p.m.

Surveyors' Institution.—Mr. C. H. Hooper on "Fruit Growing as an Auxiliary to Agriculture." 8 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Professor W. H. Corfield on "Water-supply, Drinking Water, Pollution of Water." 8 p.m.

TUESDAY, MARCH 23.

Institution of Civil Engineers.—Paper to be discussed, "The Mond Gas-Producer Plant and its Application," by Mr. H. A. Humphrey. 8 p.m.

Carlisle Architectural, Engineering, and Surveying Society.—Mr. F. H. Newman on "The Development of the Modern Gas Engine.'

WEDNESDAY, MARCH 24.

Society of Arts.—Mr. W. B. Esson on "The Transmission of Power by Alternating Electric Currents." 8 p.m.

Carpenters' Hall, London Wall. — Mr. J. Wright-Clarke on "Practical Plumbers' Work." 8 p.m.

Institution of Civil Engineers (Special Meeting).—Dr. G. Sims Woodhead will repeat the Fifth "James Forrest" Lecture on "Bacteriology." 4 p.m.

Sanitary Institute (Demonstrations for Sanitary Officers). — Inspection of Disinfecting and Filtering Appliances at J. Defries & Sons, Limited, Houndsditch. 3 p.m.

THURSDAY, MARCH 5.

Society of Antiquaries.—Mr. C. E. Keyser, M.A., F.S.A., on "The Figures of Saints found on Devonshire Screens." 8.30 p.m.

Society for the Encouragement of the Fine Arts.—First Conversazione, at the Galleries of the Royal Institute of Painters in Water Colours, Piccadilly. 8.30 p.m.

Institution of Electrical Engineers.—Continuation of Discussion on Mr. H. Benest's paper on "Some Repairs to the South American Company's Cable off Cape Verde, 1893 and 1895." 8 p.m.

Sanitary Institute (Lectures and Demonstrations for Sanitary Officers).—(1) Inspection at the Metropolitan Cattle Market, York-road, N. 3 p.m. (2) Demonstration of Diseased Meat, at the Parkes' Museum, by Dr. W. A. Bond. 8 p.m.

FRIDAY, MARCH 26

Institution of Civil Engineers (Students' Meeting).—Mr. W. J. Griffiths on "The Re-Signalling of the Liverpool-street Terminus of the Great Eastern Railway." 8 p.m.

SATURDAY, MARCH 27.

Sanitary Institute (Demonstrations for Sanitary Officers).—Inspection at Harrison & Barber's Knacker Yard, Whitechapel. 3 p.m.

Edinburgh Architectural Association.—Visit to Mid-Calder Parish Church, to East Calder Church, and to Calder House.

RECENT PATENTS:

ABSTRACTS OF SPECIFICATIONS.

5,079.—CHISELS: *F. W. Newman.*—This invention relates to chisels for cutting the "pockets" in window sash frames, and is intended to prevent the chisel from jarring and bending. Inventor makes an iron holder of convenient size (usually about 2 in. × ½ in.), with a tang at one end to receive handle, and at the other a slot of convenient depth through entire width of holder. Into this slot a thin cutting blade is fitted, which may be further secured by screws, bolts, or rivets.

5,257.—SYPHON FLUSHING CISTERNS: *J. P. O'Donnell.*—Inventor claims, in a syphon flushing cistern, the founding the dome, cylinder, or bell surrounding the stand-pipe and a syphon leg or pipe in one casting, the chamber being approximately half the height of the cistern. The two suction legs or pipes, one on either side, joining at the top of the cylinder, project downwards so that they are on the outside of the chamber surrounding the standpipe. Pins projecting from the cylinder and a fulcrum pin, also projecting from the handle casting, form the means, by the usual handle or lever, of raising the cylinder. The two suction pipes give a double means of discharge, which is thereby accelerated, while the action is much more silent, and a more certain symphonic action is secured.

27,954.—VENTILATED WINDOW LIGHTS: *J. G. Pennycuick.*—In window glass for upper sashes inventor forms rows of perforations between the rows of internal projecting prisms and external projecting bosses. From the natural tendency of the air to follow the walls of the glass surrounding the inner mouth of the apertures, the oblique surfaces of the prism above the perforations will deflect the incoming air in an upward direction.

27,955.—VAULT LIGHTS: *J. G Pennycuick.*—Inventor claims the combination of a vault light having reflecting surfaces calculated to reflect the light and direct it against the front of the basement beneath, with a refracting light or window in the front of the basement to take the light and refract it in a line somewhere parallel with the length of the basement.

29,489. — GULLEY, GREASE, AND LIKE TRAPS: *W. Durrant.*—The shell of the trap is constructed as usual with a lip and a strainer. Above the strainer is placed a grid, which is carried by a dished annulus provided with an inlet for the channel pipe. The annulus may be moved around so as to allow drainage to enter from any side. An inspection door is provided. This trap may be employed in any situation, the annulus, or adjustable top, obviating the necessity of having an inlet for the channel pipe specially constructed for the position in which the trap is set, while the inspection door permits ready access to the interior.

302.—WINDOW SHUTTER FASTENERS: *A. R. Haywood.*—Inventor claims the combination of a back plate, turned rod, slot, loose tongue, and rivetted pin, so arranged and combined that the window shutter shuts over the turned rod and the tongue drops down in such wise that the shutter can only be opened again from the inside.

NEW APPLICATIONS FOR LETTERS PATENT.

MARCH 1.—5,380. H. Jardine, Stone Cutting Tools.—5,387, Sir John Smith, Fire Grates.—5,411, W. McJoy, Ventilation.—5,431, G. Bevan, Foundations for the Hearths of Domestic Fireplaces, &c.—5,439, W. Wilkinson, Paving Blocks, Tiles, &c.

MARCH 2.—5,472, W. Webb, Window Sash Cord Clip.—5,482, E. Collier, Securing Door Knobs on their Spindles.—5,495, C. Jones, Glazing Roofs, Skylights, &c.—5,518, F. Ryan and others, Apparatus for Tieing and Building Scaffolding.—5,532, D. Wallace, Water-closets Flushing Tanks.—5,543, J. Williamson, Sash Fastener.—5,547, M. Abbott, Fastener for Windows.—5,575, R. Balaam, Bricks.

MARCH 3.—5,598, A. Buckton, Tilette (substitute for earthenware tiles).—5,611, J. Hutchison, Earthenware Pipes.—5,658, J. Owen, Appliances for House Painters' use.—5,692, A. Wakefield, Sanitary and other Pipes.

MARCH 4.—5,714, H. Johnston, Fitting-up Electric Bells.—5,738, A. Clifford, Flushing Tank or Waste Water Preventer.—5,804, W. Boatwright, Chimney Cowl.—5,816, T. Lilley, Fire Hearths.

MARCH 5.—5,839, T. Kemp, Drain Pipe Inspection Cover and Frame.—5,858, C. Müller, Combined Door Lifter and Holder.—5,881, W. Osment, Sliding Window Sashes.—5,922, T. Moody, Saws.

MARCH 6.—5,947, E. Evans, Additions to Sink and Kindred Sanitary Pipes.—5,977, A. Gibbings, Door Lock and Indicator.

PROVISIONAL SPECIFICATIONS ACCEPTED.

389, J. Pawsey and G. Glasscock, Water Waste-preventing or Flushing Apparatus.—3,372, G Knowles, Valve Ventilating Manhole Cover for House Drains and Sewers.—3,310, S. Maffey, Flushing Cisterns.—3,463, T. Kilner, Soil, Rain, and other like Pipes.—3,531, Waste or Slop Water-closets, J. Wright, London.—3,684, M. Spear, Supporting and Guiding Sliding Doors,—3,889, F.Saniter, Imitation Tiles on Metal.—3,977, W. Bryson, Sash-fastener.—4,264, T. Robb, Machinery for Sawing or Cutting Wood and other Material.—4,290, J. Jeffreys, Ventilating Fans.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to opposition for two months.

4,606, P. Funck and L. Schmidt, Preventing Damage Through the Bursting of Water Pipes.—5,270, W. Wilson, Glue Pots and analogous vessels.—9,419, F. Zregner, Grindstones.—23,465, W. Eckstein and J. Willmore, Cellar Flaps.—724, G. Crapper and M. Wharam, Automatic Syphon Flushing Tanks.—2,304, W. McDougall, Window Sash Fastener.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

February 26.—By BAKER & SONS.

Hampstead.—21, Priory-rd., u.t. 52¾ yrs, g.r. 11*l.* 1s., r. 70*l.* £710
Harrow, Middlesex.—College-rd., "Oak Lodge," f., r. 70*l.* 15s. 1,700
College-rd., "Lyndhurst," f., r. 30*l.* 860
Station-rd., a freehold house and shop, r. 20*l.* ... 900
Hove, Sussex.—1 to 5, Walsingham-ter., f., e.r. 550*l.* 5,700

By BEARD & SON.

Paddington.—43, Ranelagh-rd., u.t. 62 yrs., g.r. 6*l.* 1s. 6d., r. 42*l.* 430
Bayswater.—123 and 125, Ledbury-rd., u.t. 49¾ yrs., g.r. 18*l.* 18s., r. 100*l.* 600

By J. HIBBARD & SONS.

Stoke Newington.—7, Lordship-pk., u t. 65 yrs., g.r. 12*l.*, r. 56*l.* 490
Stepney.—11, Antcliff-st., u.t. 31½ yrs., g.r. 3*l.* 10s., r. 26*l.* 225
18, Newbold-st., u.t. 34 yrs., g.r. 4*l.*, r. 26*l.* 220
6, Bromehead-st., u.t. 31½ yrs., g.r. 4*l.*, r. 26*l.* ... 230

By SEGRAVE, BROWETT, & TAYLOR.

Penge.—St. John's-rd., "St. Helen's," u.t. 41 yrs., g.r. 10*l.*, e.r. 65*l.* 450

February 27.—By Messrs. SAUL (at Skegness).

Skegness, Lincs.—"Hildred's Hotel," and 1 r. 28 p., f. ; Burgh-le-Marsh, Lincs. : "The White Hart" and "The White Swan" Hotels, with brewery and malt kiln, area 1 a. 2 r. 16 p., f.... 8,000

By E. BAILEY & SON (at Retford).

Askham, Notts.—Gamstan Wood Farm, 116 a. 3 r. 2 p., f. and c. 1,926
A messuage, with carpenter's shop and 2 r. 31 p., c. 151

March 1.—By H. V. CHEW.

Leytonstone —Walwood-rd., "Ballinard," ., e.r. 50*l.* 685

By E. VARLEY.

Finchley.—31, Station-rd., u.t. 80 yrs., g.r. 6*l.* 6s., r. 35*l.* 350
Ilford.—Ilford-rd., two freehold building plots 310
Finsbury Park.—36, Perth-rd., u.t. 70 yrs., g.r. 6*l.* 10s., r. 34*l.* 285
Stoke Newington.—51, Springdale-rd., u.t. 74½ yrs., g.r. 5*l.* 5s., r. 36*l.* 350

By Messrs. CRONK.

Erith, Kent.—19 to 27, Cross-st., u.t. 46 yrs., g.r. 7*l.* 16s. 960

By J. MARSDEN (at Blackpool).

Blackpool, Lancs.—Hoo Hill, a freehold building estate, comprising 16a. 1 r. 30 p. 8,219

March 2.—By DUNCAN & KIMPTON.

Victoria Pk.—Chapman-rd., f.g.r. 10*l.*, reversion in 80 yrs. 220

By T. B. WESTACOTT.

Poplar.—10 to 14, Gray-st., and 188, Grundy-st., u.t. 43 yrs., g.r. 12*l.*, r. 162*l.* 16s. 1,185

By WOODS & SNELLING.

Bow.—37, Antill-rd., u.t. 71½ yrs., g.r. 4*l.* 12s. 6d., r. 28*l.* 345

By C. W. DAVIES.

Islington.—42, Gibson-sq., u.t. 30½ yrs., g.r. 2*l.*, r. 36*l.* 425
Barnsbury. — 90 and 92, Copenhagen-st., u.t. 47 yrs., g r. 24*l.*, r. 80*l.* 520
Worthing, Sussex.—Winchester-rd., "Culbins," f., r. 42*l.* 700
Stoke Newington.—65, Cowper-rd., f., r. 34*l.* 515
Wordsworth-rd., "Palatine Works," f., r. 28*l.*... 250
45, 47, 49, and 51, Shakespeare-rd., u.t. 62¼ yrs., g.r. 18*l.*, r. 141*l.* 2s. 965
28, 30, and 32, Spencer-rd., u.t. 57½ yrs., g.r. 12*l.*, r. 101*l.* 14s. 640
49, Spencer-rd., u.t. 50½ yrs., g.r. 9*l.*, r. 46*l.* 16s. 200

March 3.—By BATTAM & CO.

Hackney.—509 to 517 (odd), Cambridge-rd., f., r. 210*l.* 2,890

By CHESTERTON & SONS.

Tottenham.—20, Belmont-rd., u.t. 80½ yrs., g.r. 11*l.* 550
27, Langham-rd., u t. 80½ yrs., g.r. 6*l.* 10s., r. 32*l.* 200

By F. JOLLY & CO.

Bethnal Green.—239 and 241, Cambridge-rd., ., r. 65*l.* 1,155
Mile End.—44, Clinton-rd., f., r. 31*l.* 4s. 290

By JONES, SON, & DAY.

Old Ford.—14 and 16, Medway-rd., u.t. 52½ yrs., g.r. 8*l.* 500
Whitechapel.—41 and 43, Plummer's-row, f., r. 98*l.* 16s. £1,000

By ALFRED RICHARDS (at Tottenham).

Tottenham.—169 and 171, Northumberland-Pk., f. 705
420, High-rd. c., r. 30*l.* 670

By A. ROBERTSON (at Camberwell).

Dulwich.—318, Crystal Palace-rd., u.t. 70 yrs., g.r. 7*l.*, e.r. 28*l.* 215

March 4.—By BRODIE, TIMBS, & CO.

City of London—18, Hamsell-st., and 22, Well-st., u.t. 33 yrs., g.r. 115*l.*, r. 420*l.* 1,950

By GREEN & SON (of Hammersmith).

Barnes.—69 to 74, Railway-side, f., r. 93*l.* 12s..... 660

By NORTON, TRIST, & GILBERT.

Fulham.—300, Fulham-rd., u.t. 66 yrs., g.r. 15*l.*, r. 120*l.* 1,430
Marylebone.—130, Great Portland-st., u.t. 8 yrs., g.r. 24*l.*, r. 130*l.* 660

By STIMSON & SONS.

Blackfriars.—4, Charlotte-st., f., r. 50*l.* 800
Lambeth.—109, Oakley-st., f., e.r. 40*l.* 475
Walworth.—11, Boyson-rd., u.t. 53 yrs., g.r. 6*l.* 6s. 340
Peckham.—75, 77, 79, and 81, Sumner-rd., u.t. 65 yrs., g.r. 12*l.* 4s. 1,060
Forest Hill.—32 and 34, Beadnell-rd., f., r. 49*l.* 8s. 425
Stockwell.—29, Andalus-rd., u.t. 78 yrs., g.r. 6*l.* 6s., r. 30*l.* 275
Poplar.—148, High-st., f., r. 26*l.* 325

By NEWBON, EDWARDS, & CO.

City-rd.—15, 17, 19, and 21, Graham-st., f., r. 180*l.* 18s. 2,000
35, 45, 47, 49, and 51, Graham-st., f., r. 175*l.* 10s. 1,500
22, 32, 34, 36, and 38, City Garden-row, f., r. 93*l.* 12s. 1,065
Stratford.—53, 55, and 57, Wingfield-rd., u.t. 87½ yrs., g.r. 15*l.* 405
Euston-rd.—Crescent-mews South, i.g.r. 24*l.*, u.t. 9½ yrs., g.r. 5*l.* 135
Holloway.—520, Caledonian-rd., u.t. 45 yrs., g.r. 10*l.* 10s., r. 63*l.* 455
101, Tufnell Park-rd., u.t. 67 yrs., g.r 9*l.*, e.r. 50*l.* 400
21, 23, 27, and 29, Hargrave-rd., u.t. 66½ yrs., g.r. 21*l.* 10s. 1,115
Islington.—233, Essex-rd., u.t. 49 yrs., g.r. 6*l.* 13s. 9d., e.r. 48*l.* 450
Canonbury.—23, Compton-rd., u.t. 48 yrs., g.r. nil., r. 60*l.* 805

By J. H. BETHELL (at East Ham).

Manor Park.—Romford-rd., forty-one building plots, f. 4,105
Colchester-rd., sixty-eight building plots, f. 3,784

By TOOTELL & SONS (at Maidstone).

Maidstone, Kent.—92, 148, and 150, Union-st., f., r. 36*l.* 8s. 420

By W. NORTON (at Ludlow).

Ashford Carbonell, Salop. — "The Plowster's Farm," 33 a. o r. 33 p., f. 1,140

By WORSFOLD & HAYWARD (at Dover).

Dover, Kent.—110, Snargate-st., f. 390
6, Beach-st., f. 355
26, St. Radigand's-rd., f., r. 35*l.* 540
22 and 23, Clarendon-rd., f., r. 39*l.* 685

March 5.—By A. ALDRIDGE & CO.

Bow.—128, Grove-rd., u.t. 47 yrs., g.r. 4*l.*, e.r. 34*l.* 55

By Messrs. ALDRIDGE.

Catford.—76 and 78, Brownhill-rd., u.t. 81 yrs., g.r. 12*l.*, r. 40*l.* 300
Beckenham.—Coper's Cope-rd., "Upton Lodge," u.t. 68 yrs., g.r. 15*l.* 950

By E. HILL CLARKE.

Streatham.—31, Lewin-rd., f. 855
12, Telford-av., u.t. 83¼ yrs., g.r. 17*l.* r. 60*l.* 370

March 6.—By STEPHENSON & ALEXANDER (at Cardiff).

Saint Mellons, Glamorgan.—"Vaindre Hall," and 8 a. 1 r. 29 p., f. 5,500
Three enclosures of land, 9 a. 3 r. 1 p., f. 1,600

By CRASKE & SONS (at Colchester).

Colchester, Essex.—Old Heath, an enclosure of building land, 2 a. 2 r. 3 p., f. 210

March 8.—By FASTMAN BROS.

Sydenham.—52, West Hill, u.t. 54¼ yrs., g.r. 15*l.*, r. 70*l.* 630
Anerley.—19, Genoa-rd., f., e.r. 35*l.* 415

By NIGHTINGALE, PHILLIPS, & PAGE.

East Molesey. — Bridge-rd., "The Carnarvon Castle" p.-h., f., r. 75*l.* 3,650
Pimlico.—50, Alderney-st., u.t. 35 yrs., g.r. 8*l.* 8s., r. 60*l.* 475

By MULLETT, BOOKER, & CO.

City of London.—21, St. Mary-axe, u.t. 76 yrs., g.r. 82*l.* 8s., r. 302*l.* 8s.... 3,300
Bloomsbury.—38, Tavistock-sq., u.t. 26 yrs., g.r. 38*l.* 820
Notting Hill.—2, 4, and 6, Basing-rd., and 19A, Lancaster-mews, u.t. 67½ yrs., g.r. 24*l.*, r. 114*l.* 850
3, 5, 7, and 9, Basing-rd., u.t. 67½ yrs , g.r. 32*l.* 1,070
5, 6, and 7, Clarendon-pl , u.t. 55 yrs., g.r. 30*l.*, r. 120*l.* 720
102, Portland-rd., u.t. 55 yrs., g.r. 12*l.*, r. 55*l.* ... 450

By FRANK LLOYD, NUTTALL, & CO. (at Crewe).

Barthomley, Cheshire.—"Oakhanger Hall Farm," 190 a. o r. 25 p., f. 9,100
Sandbach, Cheshire.—"Finger Post Farm," 29 a. 1 r. 8 p., f. 2,210

March 9.—By E. SIMPSON.

Hackney.—21, 23, 25, 27, 41, and 43, Chalgrove-rd., u.t. 77 yrs., g.r. 21*l.* 745
New Cross.—14 and 28, Barlboro'-st., u.t. 76¾ yrs., g.r. 9*l.* 10s. 510

By TOWERS, ELLIS, & CO.

Bayswater.—28, Westbourne Park-villas, u.t. 44½ yrs., g.r. 7*l.* 13s., r. 70*l.* 1,000

By CHANCELLOR & SONS.

Twickenham.—Whitton-rd., an enclosure of land, 2 a. o r. 11 p., f. 1,500
London-rd., an enclosure of land, 1 a. 1 r. 13 p., f. 1,500

By SALTER, REX, & CO.

Wandsworth.—171, 173, 175, and 177, Earlsfield-rd., u t. 90 yrs., g.r. 28*l.*, r. 145*l.* 6s. 980
4 and 6, Bassingham-rd., u.t. 90 yrs., g.r. 12*l.*, r. 72*l.* 435
25 and 27, Inman-rd., u.t. 90 yrs., g.r. 12*l.* 5s., r. 63*l.* 10s. 370
Kentish Town.—37, 38, 40, and 41, Inkerman-rd., u.t. 24 yrs., g.r. 20*l.*, r. 162*l.* 705
Highgate.—14, West View-villas, u.t. 89 yrs., g.r. 8*l.* 8s , e.r. 60*l.* 565

CONTRACTS AND PUBLIC APPOINTMENT.

CONTRACTS.

Nature of Work or Materials	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
*Annual Contracts	Lewisham B. of Works	Board of Works Office, Catford, S.E.	Mar. 23
*Sewers	do.	do.	do.
*Fire Engine House, Cottage, Stable. Wall, &c.	Barnet U.D.C.	The Surveyor, 40, High-street, Barnet	Mar. 24
*Dwelling House	Gloucester Corp.	R. Read, Guildhall, Gloucester	do.
*Science School	Woolwich Polytechnic Governors	H. H. Church, William-street, Woolwich	do.
Additions to Dyeworks, Washer-lane, Halifax	,,	R. & R. E. Horsfall, Archt. 15, George-street, Halifax	do.
Schools, Blarney, Ireland	,,	Rev. D. Lynch, Blarney	Mar. 25
Additions, &c. to National Schools, Marsden-street, Huddersfield	,,	J. Kirk & Sons, Archt. Huddersfield	do.
Assembly Rooms	Featherstone (Yorks) Institute Co.	Garside & Keyworth, Archt. Pont-fract	do.
Flint Road Metal	Deal Corporation	T. C. Golder, Surv. High-street, Deal	do.
*Granite Setts	Grays Thurrock U.D.C.	A. C. James, High-street, Grays	do.
House, Stable, &c. Maude-street, Kendal	G. B. Burrows	J. Stalker, Archt. Kendal	Mar. 26
Police Station, Craigellachie	Banff County Council	F. D. Robinson, Archt. 92, Mid-street, Keith, N.B.	do.
*Stores (Various)	Walthamstow U.D.C.	G. W. Holmes, Town Hall, Walthamstow	do.
*Repairs to House	Hampton Wick U.D.C.	District Surveyor	Mar. 27
Hospital, Alford, Aberdeen	District Committee	J. Duncan & Sons, Archt. Turriff	do.
Granite Road Metal (15,000 tons)	Bucks County Council	R. J. Thomas, County Surv. Aylesbury	do.
Flags, Channels, &c.	Clayton-le-MoorsU.D.C	A. Dodgeon, Surv. Council Offices	do.
Additions to School, Cockfield, Durham	,,	W. Livesey, Archt. Raby, Staindrop, Durham	do.
Additions to Church, Cleish, near Edinburgh	,,	Hardy & Wight, Archt. 74, George-street, Edinburgh	do.
Gate Lodge, Dullerton, near Londonderry	,,	W. E. Pinkerton, Archt. 8, Diamond, Derry	do.
*Stoneware Pipe Sewers, Fire Hydrants	Hornsey U.D.C.	E. J. Lovegrove, Southwood-lane, Highgate, N.	Mar. 29
*Making-up Roads	do.	do.	do.
*Making-up Sewers, &c. Hatherley-gardens	do.	do.	do.
Cast-iron Pipe Sewer, Waterloo-road, &c.	Burnley Town Council	G. H. Pickles, C.E. Burnley	do.
*Cast-iron Pipes and Castings	Cork Corporation	H. A. Cutler, Municipal Buildings, Cork	do.
*Guernsey Granite and Cherbourg Quartzite	Beckenham U.D.C.	J. A. Angell, Council Offices	do.
*Stoneware Sewers, Formation of Roads, &c.	High Brooms Brick and Tile Co	W. Harmer, 137, London-road, Southboro'	Mar. 30
*Hartshill Granite	Thame R.D.C.	J. Goodenough, Thame	do.
Eight Houses, Green-street, Consett, Durham	Consett Indus. & Prov. Soc. Lim.	Secretary, Gibson-street, Consett	do.
Street Improvements, Maxton-street, &c.	Dover Town Council	E. W. Knocker, Town Clerk	do.
Shed, Maxton	do.	H. E. Stilgoe, Archt. Town Hall	do.
*Road and Path Materials	LondonCountyCouncil	Parks Dept. Spring-gardens, S.W.	Mar. 31
*Underpinning Isolation Ward	Met. Asylums Board	Norfolk House, Norfolk-street, W.C.	do.
Schools, Drighlington, near Bradford	,,	W. Hanstock, Archt. Branch-road, Batley	do.
*100 Lamp Columns and 100 Gully Gratings	Bethnal Green Vestry	F. W. Barratt, Vestry Hall	April 1

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered
Sewering, Metalling, &c. Victoria Park	Aylesbury U.D.C.	J. H. Bradford, Surv. 2, Rickford's-hill, Aylesbury	April 1
*Main Drainage Works	Sunbury-on-Thames U.D.C.	J. Austin, 17, Victoria-st. S.W.	do.
*Main Drainage	Ashby-de-la-Zouch R.D.C.	J. B. Everard, 6, Millstone-lane, Leicester	April 2
*P. O. West Hartlepool	Commrs. H. M. Works	12, Whitehall-place, S.W.	do.
*Laying Tarpaving and Kerb	Wanstead U.D.C.	Surveyor's. Dept. Council Offices	do.
*Postmen's Office, Walworth	Com. of H.M. Works	12, Whitehall-place, S.W.	April 6
*Cartage	Middlesex C.C.	County Surv. Guildhall, Westminster, S.W.	April 7
Additions to Church, Dunluce, Co. Antrim	Rev. J. B. Bristow	D. Douglas, Bushmills	April 10
Additions, &c. Tower House	Ipswich School Board	J. S. Corder, Archt. Ipswich	April 13
*Engine and Boiler-House and Electric Lighting Buildings	County Borough West Ham	Lewis Angell, Town Hall, Stratford, E.	do.
*Main Drainage	Woking U.D.C.	Taylor, Sons, & Santo Crimp, 27, Gt. George-street, S.W.	April 22
*Town Hall and Municipal Offices	Chatham Corporation	G. E. Bond, High-street, Rochester	April 26
*Prison and Police Barracks, Cairo	Egyptian Government	Service Administratif Offices, Cairo	May 3
*Roads and Sewers, East Sheen	H. S. Cross, M.P.	F. H. Harvey, 183, Lavender-hill, S.W.	No date
*Road and Sewers, Streatham	Lee Knowles, M.P	do.	do.
Villa, Irthlingborough	W. J. Shortland	J. C. Adnitt, Archt. High-street, Rushden	do.
Sewer, Hinds	Bury (Lancs.) Corp.	J. Cartwright, Engr. Burnley	do.
Ten Houses, Pynate-road	Batley (Yorks.) Co-op. Soc.	J. B. Buckley, Archt. Batley	do.
Additions, &c. to Schools, High-street	Brandon (Suffolk) Sch. Bd.	Boardman & Son, Archts. Queen-street, Norwich	do.
Additions to School, &c. Cargo, near Carlisle	Stanwix Sch. Bd.	J. Graham, Archt. Bank-street, Carlisle	do.
Offices, &c. Aberbeg, Mon.	J. R. & T. A. Webb	Swash & Bain, Archts. 3, Friar's-chambers, Newport, Mon.	do.
Store Buildings, Ashton-under-Lyne	Higher Hurst Co-op. Soc.	T. D. Lindley, Archt Stamford-under-Lyne	do.
Hall and Residence, Shankhill, near Belfast	,,	W. Batt, Archt. Garfield-chambers, Royal-avenue, Belfast	do.
Church, Parkhills, near Bury, Lancs	,,	J. D. Mould, Archt. Silver-street, Bury	do.
Three Houses, Carnarvon-road, Clacton	,,	T. H. Baker, Archt. Clacton-on-Sea	do.
*Timber-framed Bungalow	,,	F. Bath, Crown-chambers, Salisbury	do.
*Two Blocks, Stabling, and Yard	,,	King, 10, Agar-street, Charing Cross, W.C.	do.

PUBLIC APPOINTMENT.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.
*General Assistant	Salford Corp.	120*l.* per annum	Mar. 25

Those marked with an asterisk (*) are advertised in this Number. *Contracts, pp.* iv. vi. viii. & ix. *Public Appointments, pp.* xviii. & xxi.

9, Retcar-st., u.t. 83 yrs., g.r. 6*l.*, r. 42*l.* £375

March 10.—By SALTER, REX, & CO.

Camden Town.—15, Stratford-pl., u.t. 47 yrs., g.r. 10*l.*, r. 44*l.* 300
Harlesden.—43, Connaught-rd., u.t. 82 yrs., g.r. 8*l.*, r. 55*l.* 495
Holloway.—33, St. John's Pk., u.t. 54 yrs., g.r. 7*l.*, r. 45*l.* 370

By HERRING, SON. & DAW.

Brixton.—Tulse Hill, "Tulse Hill Lodge," u.t. 27 yrs., g.r. 25*l.* 425

By G. POTTER.

Finsbury Pk.—13, Eade-rd., u.t. 88 yrs., g.r. 5*l.*, e.r. 35*l.* 305

By PHILIP STOCK.

Brixton.—10, 12, 14, and 16, Jelf-rd., 75¼ yrs., g.r. 24*l.* 1,070
25 and 27, Kellett-rd., u.t. 76 yrs., g.r. 14*l.* 14s., r. 80*l.* 750

By HAROLD GRIFFIN.

Battersea.—2, Bolingbroke-rd., u.t. 27 yrs., g.r. 17s. 138
38 to 43, Palmerston-st., u.t. 64 yrs., g.r. 5*l.* 1,670
9, Russell-st., u.t. 64 yrs., g.r. 4*l.* 280
31, Freeland-st., u.t. 69 yrs., g.r. 4*l.* 153
46, Bridge-rd., f., r. 45*l.* 575
Southwark.—77, 79, and 81, Union-rd., u.t. 46 yrs., g.r. 17*l.* 15s., r. 120*l.* 1,180

By DOUGLAS YOUNG & CO.

Bayswater.—Westbourne-grove, f.g.r. 100*l.*, reversion in 93 yrs. 3,125
Acton.—Avenue-rd., 17 plots of building land, f.... 800
Berrymead-gardens, 3 plots of building land, f... 183
Ilford.—1, Tyne-villas, f., r. 23*l.* 8s. 290

By JOHN BOTT.

Tulse Hill.—11, 13, 15, and 19, Romala-rd., u.t. 61¼ yrs., g.r. 37*l.* 16s., r. 162*l.* 1,375
21, Deronda-rd., u.t. 61¼ yrs., g.r. 10*l.* 10s., r. 40*l.* 380
Herne Hill.—287 and 291, Norwood-rd., u.t. 81¼ yrs., g.r. 25*l.*, r. 80*l.* 655
24, Norwood-rd., u.t. 61¼ yrs., g.r. 16*l.* 16s., r. 55*l.* 700
125, Norwood-st., u.t. 74 yrs., g.r. 6*l.*, r. 36*l.* ... 290
7, 9, and 11, Dulwich-rd., u.t. 71 yrs., g.r. 16*l.*, r. 106*l.* 860
Shepherd's Bush.—20, Oaklands-grove, u.t. 66½ yrs., g.r. 6*l.*, r. 26*l.* 200

By A. DOWELL (at Edinburgh).

Drummelzier, Peeblesshire.—"The Estate of Kingledores," 4,100 a. 16,150

March 11.—By C. C. & T. MOORE.

Clapton.—6, Lower Clapton-rd., f., r. 55*l.* 800
Mile End.—56, Mile End-rd., u.t. 32¼ yrs., g.r. 6*l.* 10s., r. 50*l.* 460
Old Ford.—31, Kenilworth-rd., f., r. 49*l.* 8s. 500
Hackney.—99, Lauriston-rd., u.t. 54¾ yrs., g.r. 7*l.*, r. 40*l.* 360

By NEWBON, EDWARDS, & SHEPHARD.

Maida Vale.—3, Clifton-road, u.t. 82½ yrs., g.r. 27*l.* 12s., r. 135*l.* £1,000
Bermondsey.—103, 105, and 107, Bermondsey New-rd., f., r. 215*l.* 4,115
43, Tufnell Pk-rd., and 4, Tufnell Pk.-mews, u.t. 51 yrs., g.r. 5*l.* 5s., r. 72*l.* 10s. 655
45, Tufnell Pk.-rd., and 3, Tufnell Pk.-mews, u.t. 51 yrs., g.r. 5*l.* 5s.. r. 71*l.* 5s. 655
Canonbury.—6, Quadrant-rd., u.t. 48¼ yrs., g.r. 8*l.*, r. 45*l.* 460
Holloway.—147 and 149, Junction-rd., f., r. 101*l.*... 1,520
Camden Town.—21 and 25, Brecknock-rd., u.t. 50 yrs., g.r. 28*l.*, r. 140*l.* 1,000

By H. W. SMITH.

Camden Town.—28, Wellington-st., u.t. 14 yrs., g.r. 5*l.* 5s. 220
Barnes.—Thorn-ter., f.g.r. 6*l.* 6s., reversion in 78 yrs. 180
Ilford.—Ley-st., f.g.r. 40*l.*, reversion in 79 yrs..... 1,040

By STIMSON & SONS.

Highgate.—Claremont-rd., f.g.r. 12*l.*, reversion in 88 yrs. 350
Canning Town.—Burnham-st., &c., f.g.r. 21*l.*, reversions in 64 and 65½ yrs. 500
Woodstock-st., f.g r. 5*l.*, reversion in 60 yrs..... 135
Peckham.—Nunhead-green, &c., f.g.r. 14*l.*, reversion in 58 yrs. 330
Banstead-st., f.g.r. 10*l.*, reversion in 81 yrs. 225
Old Kent-rd.—Haymerle-rd., f.g.r. 25*l.* 4s., reversion in 70 yrs. 640
Dulwich.—High View, f.g.r. 16*l.*, reversion in 81 yrs. 465
Fernleigh Villas, f.g.r. 12*l.*, reversion in 91 yrs. 310
Wandsworth.—Earlsfield-rd., f.g.r. 24*l.*, reversion in 88 yrs. 650
Chadwell Heath, Essex.—Freehold rent charge of 5*l.* 10s. 255
Chigwell Row, Essex.—Freehold rent charge of 4*l.* 10s. 255
Dulwich.—Overhill-rd., "Mount Wise," f., e.r. 60*l.* 760
Poplar.—18, 20, and 22, East India-rd., f., r. 117*l.* 1,660
34, Pigott-st., f., r. 26*l.* 530
Chadwell Heath, Essex.—Mill-lane, a block of building land, 1 a. 0 r. 6 p., f. 410
Chigwell Row, Essex.—Romford-rd., enclosure of land, 1 a. 3 r. 14 p., f. 110
Commercial-rd. East.—Nos. 222, 234, and 236, u.t. 19 yrs., g.r. 10*l.*, r. 107*l.* 520
Lambeth.—New-cut, i.g.r. 56*l.*, u.t. 10¾ yrs., g.r. nil 325
Southall.—St. John's-parade, f.g.r. 20*l.*, reversion in 91 yrs. 580

March 12.—By T. B. WESTACOTT.

Holloway.—25 and 33, Drayton Pk., u.t. 66½ yrs., g.r. 14*l.*, r. 109*l.* 1,030
23, Benwell-rd., u.t. 66½ yrs., g.r. 8*l.*, r. 40*l.* 380
1, 11, 13, and 25, Fairmead-rd., u.t. 80½ yrs., g.r. 34*l.*, r. 163*l.* £1,495
33, 35, 37, 39, and 41, Fairmead-rd., u.t. 70¼ yrs., g.r. 38*l.*, r. 214*l.* 1,970

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.

PRICES CURRENT OF MATERIALS.

TIMBER.

Greenheart, B.G.	ton	8/0/0 0/0/0
Teak, E.I.	load	22/0/0 26/0/0
Sequoia, U.S.	ft.cu.	1/9 2/0
Ash, Canada	load	3/0/0 4/5/0
Birch, do.		3/10/0 5/5/0
Elm, do.		3/15/0 5/0/0
Fir, Dantsic, &c.		3/15/0 4/15/0
Oak, do.		3/10/0 3/10/0
Canada		5/c/o 6/0/0
Pine, Canada red		0/0/0 0/0/0
Do. Yellow		3/0/0 4/0/0
Lath, Dantsic, fath		4/10/0 5/10/0
St. Petersburg		5/0/0 6/10/0
Wainscot, Riga, &c., log		3/5/0 4/10/0
Odessa, crown		3/5/0 4/10/0
Deals, Finland 2nd & 1st std	100	9/0/0 9/10/0
Do. 4th & 3rd		9/0/0 9/10/0
Do. Riga		7/10/0 8/10/0
St. Petersburg, 1st yellow		11/0/0 13/10/0
Do. 2nd yellow		10/0/0 11/0/0
Do. white		9/10/0 11/10/0
Swedish		9/0/0 16/10/0
White Sea		10/10/0 17/0/0
Canada, Pine 1st		20/0/0 23/0/0
Do. do. 2nd		14/10/0 16/10/0
Do. do. 3rd, &c.		7/0/0 10/10/0
Do. Spruce, 1st		9/10/0 11/0/0
Do. do. 3rd and 2nd		7/15/0 9/0/0
New Brunswick		7/10/0 8/0/0
Battens, all kinds		5/0/0 20/0/0
Flooring boards, sq., 1 in. prep.		0/9/0 0/16/0
1st		0/7/6 0/12,6
Do. 2nd		0/5/0 0/7/0
Other qualities—		
Cedar, Cuba, ft.		/4½ /5
Honduras, &c.		/4 /5
Mahogany, Cuba		/5 /6
St. Domingo, cargo av.		/4½ 2/3
Mexican, do. do.		/4 /5
Tobasco, do. do.		/5 /7
Honduras, do.		/5 /6½
Box, Turkey, ton		4/0/0 25/0/0
Rose, Rio		7/0/0 14/0/0
Bahia		6/0/0 12/0/0
Satin, St. Doming.		0/0/7 0/2/0

TIMBER *(continued).*

Satin, Porto Rico	0/0/7	0/1/6
Walnut, Italian	0/0/3	0/0/7

METALS.

Iron—Pig, in Scotland	ton	2/4/11½ 0/0/0
Bar, Welsh, in London		5/15/0 5/17/6
Do. do. at works in Wales		5/10/0 5/12/6
Do. Staffordshire, in London		5/15/0 6/10/0
COPPER—British cake and ingot		53/15/0 54/5/0
Best selected		54/10/0 55/15/0
Sheets, strong		59/10/0 60/10/0
Chili bars		50/2/0 0/0/0
YELLOW MTL	lb.	0/0/5 0/0/5½
LEAD—Pig, Spanish	ton	11/10/0 11/11/3
English com. brands		11/12/6 11/15/0
Sheet, English 6 lbs. per sq. ft. and upwards		12/16/3 0/0/0
Pipe		13/6/3 0/0/0
ZINC—English sheet	ton	20/10/0 0/0/0
Vieille Montagne		21/10/0 0/0/0
Spelter		17/2/6 17/5/0
TIN—Straits		59/6/3 0/0/0
Australian		60/17/6 61/7/6
English Ingots		63/10/6 64/10/0
Banca		0/0/0 0/0/0
Billiton		59/15/0 60/0/0

OILS.

Linseed	ton	14/15/0 0/0/0
Cocoanut, Cochin		27/15/0 0/0/0
Do. Ceylon		24/0/0 0/0/0
Palm, Lagos		24/10/0 0/0/0
Rapeseed, English pale		27/10/0 27/15/0
Do. Brown		27/0/0 27/10/0
Cottonseed ref.		15/17/6 16/10/0
Oleine		18/10/0 19/10/0
Lubricating U.S.		0/6/3 0/7/6
Do. black		0/4/9 0/6/6
TAR—Stockholm	barrel	22/0 0/0/0
Archangel		0/12/6 0/0/0
Turpentine	ton	20/15/0 20/17/6

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.* N.B.—We cannot publish Tenders unless authenticated by the name and address of the sender: and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is under £100, unless in some exceptional cases and for special reasons.]

ABINGDON.—For the supply of 1,800 tons broken and unbroken Hartshill stone, for the Culham Rural District Council:—

	Unbroken.	Broken.
	s. d.	s. d.
C. Abell, Hartshill	8 1	9 4
H. N. Trye, Hartshill	8 3	9 9
W. Boon, Nuneaton	8 1	9 7

ANDOVER (Hants).—For alterations, &c., to town hall, for the Town Council. Mr. Alfred Purkess, Borough Surveyor, Town Hall, Andover:—

Annett & Son	£245 0	Sydney Bell, London-st., Andover*	£169 10
Frank Beale	215 0		
Hy. Cook	197 0		

* Accepted.

ASHBOURNE (Derby).—Accepted for the construction of a reservoir, Middleton-by-Wirksworth, for the Rural District Council of Ashbourne. Mr Bailey, Surveyor, North-avenue, Ashbourne:—

Walker Bros., Wirksworth, Derbyshire £105

[Three tenders received.]

ASHTON-UNDER-LYNE.—For paving, &c., Latchford, Romney, and Egerton streets. Mr. J. T. Earnshaw, C.E., Town Hall, Ashton-under-Lyne:—

Latchford-street.

R. Fish, Ashton-under-Lyne ..... At per schedule list.

Romney and Egerton-streets.

W. Neal, Ashton-under-Lyne ..... At per schedule list.

BANGOR (Wales).—For additions, &c., to Nos. 322, 324, 326, and 328, High-street, for Mr. J. E. Roberts, J.P. Mr. R. Glynne Davies, architect, 220, High-street, Bangor:—

Evan Williams	£1,060 0	Watkin Jones	£788 10
Jones & Williams	893 0	W. O. Daniel, Vronhen-log Ten, Upper Bangor*	750 0
Wm Parry, jun.	883 0		
R. & J. Williams	853 0		

* Accepted.

BRISTOL.—For restoring, partially rebuilding, and making alterations and additions to Cotham Wesleyan church, Redland-road, Bristol. Messrs. Robert Curwen, London, and Herbert J. Jones, Bristol, architects:—

	Time (Weeks).	
Cowlin & Sons	36	£7,245
C. A. Hayes	52	6,850
Wilkins & Sons	52	6,693
Stephens, Bastow & Co., Ltd. (accepted)	32	6,555
G. Humphreys	48	6,426

BRISTOL.—For alterations and additions to 18, Old Market-street, for Mr. R. Bromhead. Mr. Walter Andrew, architect, Parkstone:—

J. Perkins	£496	Clarke	£445
W. Cowlin & Son	483	E. Love & Co.	419
Hughes & Weeks	465	G. H. Wilkins	387
Wm. Church	447		

BRANKSOME (Dorset).—Accepted for erection of three shops on the Upper Bourne Estate, Branksome, for Mr. A. T. Frampton. Mr. Walter Andrew, architect, Parkstone:—

H. W. Lovell £1,530

BROMLEY (Kent).—For sewering, paving, &c., Wharton-road, and eight other roads, for the Urban District Council:—

	Sidney Hudson.	T. Lansbury.	Mowlem & Co.	E. Peill & Sons, Bromley.*
	£ s. d.	£	£	£ s. d.
Wharton-road	527 4 1	491	563	452 9 0
Haxted-road	239 17 5	192	217	181 9 0
Ann's-place	220 18 3	153	168	146 8 0
Glebe-road	710 8 10	691	782	641 0 0
Station-road	638 5 1	627	726	583 10 0
Florence-road	406 3 6	400	439	360 0 0
Heathfield-road	1,024 5 7	975	1,167	925 0 0
Elmfield-park	395 8 8	388	433	334 9 9
Southlands-road	1,127 10 1	1,151	1,184	958 17 0

* Accepted.

BRYNMAWR (Breconshire).—For the erection of a parish church. Messrs. Nicholson & Hartree, architects, Hereford:—

	For nave.	For whole church.
H. Smith	£2,872 12 6	£3,989 10 6
J. Morgan	2,828 16 0	3,914 0 0
J. Jenkins	2,753 0 0	3,789 0 0
Thomas & Sons	3,290 0 0	—
J. Jenkins, Brynmawr	2,228 0 0	*3,094 0 0

* Modified and accepted.

BURGESS HILL (Sussex).—For the execution of sewerage works, Ferndale-road, for the Urban District Council:—

W. H. Holman & Co.	£230 0	William Oram, Burgess Hill (accepted)	£109 15
Herbert A. Chambers	213 12		

BURNLEY.—Accepted for the erection of a hospital for infectious diseases, Kibble-bank, Burnley, for the Burnley Joint Hospital Board. Mr. F. S. Bulton, architect, Blamel-street, Burnley. Quantities by architect:—

Masonry, Bricklaying, &c.—A. Robinson, jun., Nelson	£7,219 0 0
Carpentery and Joinery.—G. Smith & Sons, Burnley	1,790 0 0
Slating.—W. Stanworth, Burnley	524 17 2
Plumbing and Glazing.—Watterson, Hargreaves, & Crossley, Burnley	914 15 4
Plastering.—Rawlinson & Sons, Burnley	389 4 7
Painting.—H. Walker, Bingley	104 17 5

CARDIFF.—For the erection of a residence and stables, Fairwater, for Mr. Sidney Robinson, Cardiff. Mr. E. T. Jones, architect, Caledonian Chambers, St. Mary-street, Cardiff. Quantities by the architect:—

Williams & Thomas	£5,825	W. Symonds	£4,182
E. R. Evans Bros.	4,900	Powell & Mansfield	4,175
C. & F. Couzens	4,664	G. Griffiths	4,059
Cox	4,557	H. Morgan	3,980
Joseph Thomas	4,505	E. Turner & Sons	3,944
D. Davies	4,575	Chas. Parsons	3,745
Jones & Maddren	4,350	Cadwallader & Hockeridge, Cardiff*	3,638
E. R. Ridgeway	4,345		
Cox & Baldo	4,341		

* Accepted.

CARDIFF.—For the erection of two houses and shops, Cardiff-road, Cadoxton, for Mr. Wm. Scott. Messrs. Gethin & Wallis, architects, Windsor-chambers, Westgate-street, Cardiff. Quantities by architects:—

F. W. Pitchall	£1,508 0 0	Ll. Griffiths	£1,238 4 0
Powell & Mansfield	1,398 0 0	C. H. Parsons	1,223 0 0
Jones & Maddren	1,391 5 0	C. H. Hirst, Barry Dock*	1,120 0 0
Evans & Owen	1,370 7 11		
Williams & Herbert	1,278 5 4		

* Accepted.

CHELMSFORD.—Accepted for the erection of laboratory, &c., at the County Offices, Duke-street, for the Essex County Council. Mr. H. Stock, County Surveyor, 9, Denman-street, London Bridge:—

Francis Thoday & Co., 104, Hills-road, Cambridge £637 14

COVENTRY.—For erecting new offices for Mr. Thos. Smith, Coventry. Mr. E. J. Purnell, jun., architect, Bank Chambers, Coventry:—

C. Garlick	£1,164	C. H. Barber (accepted)	£1,124

COLCHESTER.—For the erection of a warehouse in Priory-street. Mr. W. C. Street, architect, 7, Victoria-street, Westminster, S.W. Quantities by Mr. Max Clarke, 4, Queen-square, W.C.:—

G. Dobson	£1,679	W. Chambers, Magdalen-street, Colchester	£1,369
H. Everett & Son	1,568		

CORK.—For additions, &c., to "Inchera," Dunkettle, for Mr. George M. Jevers. Mr. J. F. M'Mullen, architect, 30, South Mall, Cork:—

C. Mullany, Lower Glanmire-road, Cork £1,050

CROYDON.—For erecting and completing a group of schools, for boys, girls, and infants, including cookery and laundry rooms, playsheds, water-closets, and offices, boundary walls, asphalting, &c., in Dering-place, South Croydon, for the Croydon School Board. Mr. Robert Ridge, architect, 12, Katherine-street, Croydon. Quantities by Mr. Mansfield Price, Sutton, Surrey:—

W. Smith & Sons	£8,750	J. & C. Bowyer	£7,900
J. Smith & Sons	8,650	E. P. Bulled & Co.	7,693
S. Page	8,456	E. J. Saunders*	7,200
W. Holt & Sons	8,400		

* Accepted.

[All of Croydon.]

* Subject to the approval of the Education Department.

CROYDON.—For alterations and additions to the Board schools Sydenham-road, Croydon, including new cookery and laundry rooms, emergency staircase, new water-closets, and offices and playsheds, for the Croydon School Board. Mr. Robert Ridge, architect, 12, Katharine-street, Croydon:—

J. & C. Bowyer	£1,344	H. Bacon	£1,197
W. Akers & Co.	1,292	E. P. Bulled & Co.	1,165
W. Holt & Co.	1,275	Umlandt & Nicoll*	1,147
J. Smith & Son	1,212		

* Accepted.

[All of Croydon.]

* Subject to the approval of the Education Department.

EBBW VALE (Mon.).—For the erection of school buildings at Ebbw Vale, for the Aberystwith School Board. Mr. Geo. Resser, architect, Victoria Buildings, Abercarn. Quantities by Mr. R. L. Roberts, Holly House, Newbridge:—

Williams & Rogers	£1,897 0	C. F. Morgan	£1,465 0
E. Mainwaring	1,875 0	D. Vaughan	1,429 0
D. Thomas	1,747 15	D. John Davies, Newport*	1,349 0
J. Jenkins	1,569 0		
J. Monks & Co.	1,478 0		

* Accepted.

[Architect's estimate, £1,400]

ELGIN (N.B.).—For the erection of a warehouse, Longmorn Distillery, for the Longmorn Glenlivet Distillery Company. Mr. C. C. Doig, architect, Elgin:—

Building.—George Reid, Elgin	£185 0 0
Carpentry.—Thos. Mackenzie, New Elgin	259 0 0
Slating.—George Ogilvie, Elgin	224 0 0
Plumbing.—Wm. Lyon & Sons, Elgin	42 11 0
Painting.—William Fordyce, Elgin	3 18 9
Ironwork.—P. W. MacLellan Cluther, Glasgow	38 0 0

ELGIN (N.B.).—For the erection of a warehouse, Mortlach Distillery, Dufftown, for Messrs. George Cowie & Son. Mr. C. C. Doig, architect, Elgin:—

Building.—J. Mackenzie	£467 0 0
Carpentery.—Morrison & MacCombie	1,142 0 0
Slating.—J. Wilson	500 0 0
Plumbing.—Ross Bros.	116 17 6

[All of Dufftown.]

FRIERN BARNET.—For kerbing, making up, &c., Friern Barnet-road and two other roads, for the Urban District Council. Mr. E. J. Reynolds, C.E., District Council Offices, Friern Barnet:—

For Oakleigh-road South.

W. Nicholls	£586 19 9	W. Griffiths, Kingsland-road*	£461 2 3
T. Adams	489 0 0		

For Friern Barnet-road and Colney Hatch-lane.

W. Nichol's	£618 8 5	W. Griffiths, Kingsland-road, N.*	£422 8 11
T. Adams	549 0 0		

* Accepted.

HARRIS, N.B.—For the erection of two piers, West Loch Tarbet and Scalpay, for the Inverness County Council. Mr. G. Woulfe Brenan, C.E., Oban. Quantities by the Engineer:—

West Loch Tarbet Pier.

T. Macdonald	£1,780 17 5	John Adam & Co.	£1,450 0 0
H. R. Blackburn	1,567 0 0	Wm. Morrison, Stornoway (recommd.)	1,349 15 7
Wm. Bain	1,500 0 0		

Scalpay Pier.

John Adam & Co.	£1,850 0 0	Wm. Morrison, Stornoway (recommd.)	£1,145 8 0
T. Macdonald	1,599 4 11		
H. R. Blackburn	1,398 0 0		

HARROGATE.—Accepted for flagging and kerbing the footpath, Parliament-street, for the Corporation. Mr. S. Stead, Borough Surveyor, Municipal Offices, Harrogate:—

J. L. Hampton-Matthews, York-road, Harrogate ... £110 12

HEREFORD.—For the erection of a hall and other buildings, St. Peter's Parish. Messrs. Nicholson & Hartree, architects, Hereford:—

E. W. Wilks	£1,347	J. Davies	£1,176
W. P. Lewis & Co.	1,241	Beaven & Hodges	1,173

[All of Hereford.]

HORSHAM.—For the supply of road materials—Thornton Heath flints—for the Rural District Council. Mr. Wm. Dengate, surveyor, 58, Park-street, Horsham:—

	Per cub yd. s. d.
Geo. T. Hall, East Croydon*	5 7
W. Hillman, Portslade†	5 2

[The quantity is about 3,000 cubic yards, delivered at various stations, of which Horsham is the centre]

*Delivered at Horsham Station.

†Portslade flints, delivered to West Grinstead Station, about 750 cubic yards.

HOVE (Sussex).—Accepted for the execution of roadmaking and other works, Ranelagh-villas, Shakespeare-street, &c. Mr. H. H. Scott, Town Surveyor, Town Hall, Hove:—

Ranelagh-villas.—J. Parsons & Sons, Hove	£445
Shakespeare-street.—J. Parsons & Sons	167
Sheridan-road.—J. Parsons & Sons	99

KINGSBURY.—Accepted for fences, gates, and retaining wall, Fairfields, Kingsbury, Middlesex. Mr. George Hornbower, architect, London:—

Thomas Turner, Ltd. £203 8

KINGSWEAR.—For alterations and additions to "Dart Bank" for Lieut. G. F. Whitmore, R.N. Mr. W. Taprell Allen, architect, of London and Kingswear. Quantities by Mr. Vincent Cattermole Brown, Paignton:—

R. T. Pillar	£800	John E. Short, Kingswear*	£645
E. P. Bovey	690	W. G. Row	610
E. Pike	678	R. C. Pillar	603

* Accepted.

LEICESTER.—For sewering, &c., St. Dunstan, St. Paul's, and Bramley-roads. Mr. Cecil Ogden, C.E., Leicester. Quantities by engineer:—

J. T. Hutchinson & Sons	£1,290 0	Bentley, Son, & Parkington	£1,208
T. Philbrick	1,283 0	S. Thumbs	1,163 7
		Stimson & Rolleston, Leicester (accepted)	1,160 0

LESMAHAGOW (N.B.).—For additions, &c., to parish church Mr. A. N. Paterson, architect, 135, Wellington-street, Glasgow:—

Masonry.

Guthrie & Co.	£813 0 0	Clarkson & Sons, Lesmahagow	£629 9 1
Jas. Herbertson & Son	784 6 6		
Dunlop & Co.	739 8 10		

Joinery.

Anderson & Henderson	£1,464 0 0	Stewart	£1,274 18 6
Baxter & Son	1,413 0 0	J. N. Morrison	1,214 0 0
Allen & Baxter	1,393 3 4	Burns & Co.	1,150 0 0
Guthrie	1,380 0 0	J. Herbertson & Son	1,131 0 0
Simpson	1,372 0 10	John Hutcheson, Lesmahagow*	952 10 0

[Tenders for slating, plumbing, and plastering, all below £100.]

* Accepted.

LEYTON (Essex).—For laying sewers, &c., Boundary-road, for the Urban District Council. Mr. Wm. Dawson, C.E., Town Hall, Leyton:—

T. Adams	£456 0	G. Wilson	£300 10
J. Burrell	488 0	J. Jackson, Leyton*	297 0

* Accepted.

LONDON.—For alterations at the "Duke of York" public-house, Bow, London, E. Mr. Herbert Riches, architect, 3, Crooked-lane, King William-street, E.C.:—

G. E. Todd	£953	J. T. Robey	£845
T. Osborn & Sons*	911	W. Harper	839
S. Salt	852		

* Accepted (shortest time).

LONDON.—For drying chambers and horses and warm-air blast apparatus at the St. Luke's Workhouse, City-road, E.C., for the Guardians of Holborn Union. Mr. A. Saxon Snell, architect:—

Rosser & Russell, Ltd.	£770 0 0	Waller & Co.	£555 0 0
Bradford & Co.	699 0 0	T. Potter & Sons, South Molton-street*	398 0 0
D. & J. Tullis	691 2 6		
Summerscales & Sons	685 0 0		

* Accepted.

LONDON.—For alterations and additions, 271, Wick-road, Hackney, for Mr. Jones. Messrs. Cooper & Goulding, architects:—

Walker	£246 10	S. Grist	£228 0
E. Houghton & Son	231 0		

LONDON.—For pulling-down and rebuilding "The Locomotive" public-house, James-street, Camden Town, for Messrs. Matthews & Canning. Messrs. Perry & Reed, architects, 9, John-street, Adelphi, W.C.:—

Clarke & Bracey	£4,997	Faulker	£4,670
Perry & Co.	4,900	H. Knight & Son	4,552
Patman & Fotheringham	4,821	Edwards & Medway	4,539

LONDON.—Accepted for building three houses on the Birkbeck Estate, Tottenham, for Mrs. Bell. Mr. J. W. Couchman, architect, Pembury-road, Tottenham:—

H. Knight & Son, Tottenham £1,024 10

LONDON.—For sewering and making 1,090 ft. road, Streatham Common, S.W., for Mr. F. W. Lowe. Mr. R. J. Sadleir, surveyor, Trevena, Boundaries-road, Balham, S.W.:—

Nowell	£1,723	
Peill	1,577	Complete in 13 weeks
Iles	1,536	,, 18 ,,
Carpenter	1,515	,, 14 ,,
Wilson	1,399	,, 10 ,,
Stuart & Turner	1,375	,, 18 ,,
Lawrence	1,333	,, 12 ,,
Mayo	1,250	,, 12 ,,
Law, Kidderminster*	1,225	,, 12 ,,

* Accepted.

LONDON.—For 253, 253A, 254B, Portobello-road, Notting Hill for Messrs. Lilley & Skinner. Mr. A. Sykes, architect, 45, Finsbury-pavement, E.C.:—

Bennett	£1,025	Perkins & Co.	£977
Powditch & Co.	1,020	Polden	955
McCormick & Sons	987		

MANCHESTER.—For alterations to the Congregational Church, Ashley-lane. Mr. Herbert Ogden, architect, 14, Brown-street, Manchester:—

Peace & Norquoy	£380 0	Young, Tinker, & Young, Manchester (accepted)	£348 0
Gerrard & Son	348 10		

MOLD (Flints.).—For additions to school buildings, for the School Board:—

R. Roberts £15 10

MORLEY (Yorks).—For the erection of mill premises, for Mr. A. Glover. Mr. T. A. Buttery, architect, Queen-street, Morley:—

Masonry.—Pearson & Ainsworth, Morley (labour only)	£1,370 0 0
Do. do. (materials)	1,600 0 0
Joinery.—G. Elliot, Hanging Heaton	1,337 0 0
Plumbing.—G. A. Firth, Morley	105 0 0
Plastering.—W. Broadbent, Morley	270 17 11
Slating.—J. Atkinson & Son, Leeds	390 0 0

NEW MILLS (Derbyshire).—For the execution of sewerage works, for the Urban District Council of New Mills. Messrs. Spinks & Beever, engineers, 9, Albert-square, Manchester. Quantities by engineers:—

L. & W. Meadows	£8,690 0 0	Geo. Freeman & Sons	£5,625 0 0
Ben Graham & Sons	6,708 0 0	Etheridge & Clarke	5,824 12 0
A. Brunton & Son	6,687 11 0	A. Taylor	5,551 3 5
Wm. Underwood & Bro.	6,320 0 0	A. Kellett, Manchester*	5,544 0 0
Enoch Tempest	6,218 8 2		
A. Braithwaite & Co.	6,190 0 0		

* Accepted.

NEWTOWN.—Accepted for two houses, Llanidloes-road, Newtown, Montgomeryshire. Mr. George Hornblower, architect, London:—

J. W. Swain, Newtown £1,209

[Exclusive of fittings]

PAISLEY (N.B.).—For the erection of a fire-engine station, Johnston-street, for the Commissioners. Mr. W. Moncur, Surveyor, Municipal Buildings, Paisley:—

Masonry.—Morrison & Muir, Glasgow	£4,067 3 5
Wright.—Alex. McNaughton, Paisley	1,691 2 0
Iron and Steel.—Hanna, Donald, & Wilson, Paisley	648 19 9
Plumbing.—Barr & Provan, Paisley	323 7 2
Plastering.—William Speirs, Paisley	249 6 0
Slating.—J. Jeffrey & Co., Paisley	226 0 8½
Gasfitting.—Jas. Kilpatrick & Son, Paisley	76 16 4
	£7,262 6 4

NUNNINGTON (Yorks).—For the widening, &c., of a stone bridge. Mr. W. Stead, C.E., County Surveyor, Northallerton :—
W. Blackburn, Brougton, Malton* £738 5 3
* Recommended for acceptance.

PARKSTONE (Dorset).—For alterations to premises, Station-road, Parkstone, for Mr. J. A. Haynes. Mr. Walter Andrew, architect, Parkstone :—

Jenkins & Sons	£443	J. H. Wilson*	£280
Burt & Vick	315	* Accepted.	

PENRYN (Cornwall).—Accepted for the supply of 1,000 tons stone, for the East Kerrier Rural District Council. Mr. J. H. Chubb, District Surveyor, Penryn :—
Per ton.
Captain J. Trebilcock, Devoran, Cornwall ..... 4s. 6d.

PETERBOROUGH.—For the construction of a new street, for Messrs. Keeble Bros. Mr. F. H. Cooke, surveyor, Priestgate, Peterborough. Quantities by surveyor :—

J. Guttridge	£685 0	Hockley & Son, Grantham (accepted)	£400 0
J. W. Rowe	460 12		
D. Gray	447 0		

RUSHDEN (Northamptonshire).—For alterations and additions to "The Rectory," Rushden, for Mr. Fred. Knight. Mr. Arthur Garnar, architect, 66, Oakhurst-grove, East Dulwich, London, S.E. :—
E. C. Bayes £672
(No competition.)

SHILLINGFORD HILL.—Accepted for erecting a house at Shillingford Hill, Berkshire. Mr. George Hornblower, architect, London, W. :—
Brasher & Sons, Wallingford £3,300
[First contract.]

SLEAFORD.—For the supply of 1,000 tons broken granite, for the Urban District Council :—
Pattinson & Co., Sleafoad ..... 9s. 5d.
" " " ..... 10s. 6d.

SOUTHAMPTON.—For taking down and rebuilding Nos. 137 and 138, St. Mary-street, Southampton. Mr. Walter Andrew, architect, Parkstone, Dorset. Quantities by Mr. H. J. Weston, Southampton :—

Exors. of Franklin	£1,478	Dyer & Sons	£1,170
T. Rashley	1,250	F. Osman	1,146
Burt & Vick	1,175	Jenkins & Sons*	1,118
Wright & Son	1,172	* Accepted.	

SOUTHEND-ON-SEA.—For structural alterations to the "Cornucopia" public-house, Marine Parade, Southend, Essex, for Messrs. Walker & Son. Messrs. Burles & Harris, architects, Clarence-street, Southend. Quantities by Mr. Henry Bushell, 33, New Bridge-street, E.C. :—

F. Dupont	£465	A. E. Symes	£438
T. Whur	450		

STOCKPORT.—For the execution of road works within the borough, for the Corporation. Mr. J. Atkinson, C.E., Borough Surveyor, St Petersgate, Stockport :—
Wm. Briscoe & Sons £765 12 10½
P. D. & S. D. Hayes, Stockport (accepted) 701 11 1

SUTTON (Co. Dublin).—For the erection of three dwelling-houses. Messrs. A. Scott & Son, architects, 16, William-street, Drogheda :—

P. Monks	£4,000	Scott & Co.	£2,365
P. Hannay	2,500	Robert Johnson, Dublin*	2 250
		* Accepted.	

SWORDS (Co. Dublin).—For erection of new dispensary, for the Balrothery Board of Guardians. Messrs. A. Scott & Son, architects :—

Frances Gogarty	£555	John Reid, Garresown, Co. Dublin*	£490
Thos. Quinn	495		
		* Accepted.	

THIRSK.—For the erection of a stone bridge, Sutton-under-Whitestonecliff. Mr. W. Stead, C.E., County Surveyor, Northallerton :—

Jno. Kay	£625 0 0	Wm. Blackburn, Broughton, Malton*	£411 15 1
A. Atkinson & Co.	447 7 4		
		* Recommended for acceptance.	

UCKFIELD (Sussex).—For the construction of sewage disposal works, for the Urban District Council. Mr. G. Maxwell Lawford, engineer, 13, Victoria-street, Westminster. Quantities by Mr. F. C. Hunt :—

B. Cooke & Co.	£691 0 0	Joseph Jackson, Forest Gate	£548 15 7
J. Piper	610 0 0	W. H. Holman & Co.	522 3 6
C. Pelham	579 17 7		
F. Brunton	559 0 0		

WALSALL.—Accepted for the execution of sewerage works, Mellish-road, for the Corporation :—
H. Holloway, Wolverhampton £328

WALTHAM CROSS.—For the erection of stables, &c., at "Black Prince," Waltham Cross, for Messrs. Christie & Co., The Brewery, Hoddesdon. Mr. Thos. Merchant, surveyor, Hoddesdon :—

J. A. Hunt	£417	T. Pollit	£325
J. Bunce	355	W. Lawrence, Waltham Abbey (accepted)	319
J. Bentley	346		

WEST ARDSLEY (Yorks).—For the erection of farm buildings, Black Gates Farm, for Messrs. Holliday & Sons. Mr. T. A. Buttery, architect, Queen-street, Morley :—
A. Furness East Ardsley (all trades except joinery) £144 7
Joinery.—Executed by Proprietors.

YARM-ON-TEES (Yorks).—For the erection of a constable's house. Mr. W. Stead, C.E., County Surveyor, Northallerton :—

H. Doughty	£645 12 0	A. Atkinsen & Co., Stockton*	£578 5 2
H. & J. Bainbridge	635 7 11		
E. Cruddas & Son	632 12 8		
		* Recommended for acceptance.	

TO CORRESPONDENTS.

G. A. H., S. S., J. F. W., W. W., J. W. B. (amounts should have been stated). F. G. (below our limit).

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Advertisements for the current week's issue are received up to THREE o'clock p.m. on THURSDAY, but "Classification" is impossible in the case of any which may reach the Office after HALF-PAST ONE p.m. on that day. Those intended for the Front Page should be in by TWELVE noon on WEDNESDAY.

SPECIAL.—ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same must reach the Office before 10 a.m. on WEDNESDAY MORNING.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, &c. left at the Office in reply to advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

PERSONS Advertising in "The Builder," may have *Replies addressed to the Office,* 46, Catherine-street, Covent Garden, W.C. *free of charge.* Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage.

AN EDITION Printed on THIN PAPER, for FOREIGN and COLONIAL CIRCULATION, is issued every week.

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JUST PUBLISHED. Crown 8vo, Cloth. 3s. 6d.
SPONS' ARCHITECTS' AND BUILDERS' PRICE BOOK
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POCKET TECHNICAL GUIDE, MEASURER, and ESTIMATOR, for BUILDERS.
By A. C. BEATON. Eighth Edition. Revised and Priced according to the Present Value of Materials and Labour.
"No architect, surveyor, builder, or valuer should be without his 'Beaton's Guide.'"—*Building News.*
London: CROSBY, LOCKWOOD, & SON, 7, Stationers' Hall-ct. E.C.

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All scales of these valuable Maps can be obtained for any part of the British Isles from the London Agent
EDWARD STANFORD, 26 and 27, COCKSPUR STREET, CHARING CROSS, S.W., Geographer to the Queen.
Inquiries answered, and Estimates for Mounting given. Résumé of Publications post-free on application to
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SPECIFICATIONS for the use of Surveyors, Architects, Engineers, and Builders. By JOHN LEANING. Author of "Quantity Surveying." "A set of contract documents in fac-simile," &c. 8vo, cloth. 4s. 0d.
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THE WORSHIPFUL COMPANY OF CARPENTERS.
The next of the Series of FREE LECTURES on matters connected with Building, will be delivered at CARPENTERS' HALL, London Wall, on WEDNESDAY next, MARCH 24th, at EIGHT p.m. by J. WRIGHT CLARKE, Esq. Subject: "Practical Plumber's Work." Chairman, Ald. Sir STUART KNILL, Bart. LL.D.
For tickets of admission, apply to S. W. PRESTON, Esq. at the Hall.

SANITARY INSPECTORS' and PRACTICAL SANITARY SCIENCE EXAMS. of THE SANITARY INSTITUTE. Complete Courses of Instruction by correspondence for these and similar exams. conducted by Gentleman (Engineer, Surveyor, and Sanitary Inspector to Urban District Council) holding three Certificates from San. Inst. 1st Class Honours Medallist, Hygiene, &c. Several hundred successes. Classes for 1897 EXAMS. just commencing.—Apply early for Syllabus of Subjects, &c. to MEM. SAN. INST. Box 195. Office of "The Builder."

SANITARY INSTITUTE EXAMS.—Preparation for the Inspectors' Examination under a system of correspondence needing no Text Books or Acts, by C. H. CLARKE, Assoc.San.Inst. Member of the Société Française d'Hygiène, 1st Honoursman and Medallist in Hygiene, Member of the Society of Arts, Professional Lecturer on Sanitation. Clarke's methodical and reliable "Aids":—"Notes on Sanitary Law" (enlarged edition), 1s. 6d. "Sanitary Appliances" (diagrams), 1s. "Trade Nuisances," 6d. "Practical Drain Inspection," 6d. "Calculation of Cubic Space," 1s.—Prospectus, Testimonials, Press Notices, and "Aids" from 13, Albert-road, Ilford, E.

SANITARY INSPECTORS.—EXAMINATIONS for qualification under the SANITARY INSTITUTE. A member of the above, and holder of certificates of competency in sanitary knowledge and building construction, is prepared to COACH ladies and gentlemen for these Exams. either in class or by correspondence. Fees entirely conditional on the pupil's success, payable after passing, bar a nominal guarantee of good faith.—J. W. TOWNSEND, F.I.S.E. 25, High-street, Wimbledon.

ROYAL INDIAN ENGINEERING COLLEGE, Cooper's Hill, Staines.—The COURSE of STUDY is arranged to fit an engineer for employment in Europe, India, and the Colonies. About 40 students will be admitted in SEPTEMBER, 1897. The Secretary of State will offer them for competition, twelve appointments as Assistant Engineers in the Public Works Department, and three appointments as Assistant Superintendents in the Telegraph Department.—For particulars, apply to the Secretary at the College.

SURVEYORS' INSTITUTION EXAMINATIONS.—Complete courses of preparation in class or by correspondence for the Professional Associateship and Fellowship.—At the recent examination First Place was secured in three out of the four different divisions of the examinations. Both this year and last year the "Institution Prize," the "Driver Prize," and the "Penfold Silver Medal," were obtained by Mr. Parry's pupils.—For particulars, apply to Mr. RICHARD PARRY, F.S.I. A.M.I.C.E. 27, Great George-street, Westminster (immediately opposite the Surveyors' Institution).

ARCHITECTURAL SKETCHING TOUR to FLANDERS for EASTER starts APRIL 14th. Applications by MARCH 31st. Inclusive cost 6½ guineas for week. LAND SURVEYING CLASS starts APRIL 24th. Two guineas for eight field lessons.—G. A. T. MIDDLETON, 56, Dafforne-road, S.W.

R.I.B.A. EXAMS.—PREPARATION personally or by correspondence. Any subject taken separately if desired. Exceptional arrangements for Resident Students. Architectural Lending Library, catalogues 6d. each.—Apply to Mr. W. CHURCH HOWGATE, A.R.I.B.A. Perchard House, 70, Gower-street, W.C. (close to British Museum).

CIVIL SERVICE TECHNICAL EXAMS.—PREPARATION, personally or by correspondence. Residence can be arranged if desired.—Full particulars on application to Mr. A. H. HENTY, Perchard House, 70, Gower-street, W.C.

MUNICIPAL & COUNTY ENGINEERS' EXAMINATION.—Mr. RICHARD PARRY, A.M.I.C.E. F.S.I. &c. of 27, Great George-street, Westminster, prepares pupils by correspondence for this examination. The course of work may be taken to extend over three, six, or twelve months, according to previous knowledge.

YOUNG ARCHITECT, A.R.I.B.A.
DESIRES to ASSIST others in the PREPARATION of DRAWINGS at his own office.
G. SCORER, 28, Newman-street, W.

ADDITIONAL CAPITAL.—Manufacturers, Merchants, or Industrial Limited Companies in want of ADDITIONAL CAPITAL can obtain same through a firm of Financial Agents at Bank rate of Interest. No commission charged unless business results. Principals or their Solicitors only treated with.—Address, CAPITAL, 1,340, care of Messrs. Deacon's, Leadenhall-street.

ADAMANT STONE and PAVING CO. LTD. *v.* LIVERPOOL CORPORATION.—After three days' trial the APPEAL of the Liverpool Corporation against the decision of Mr. JUSTICE ROMER, that the Corporation had infringed the Patent belonging to the Adamant Stone and Paving Co. Ltd. of London and Aberdeen, has been WITHDRAWN.

PRACTICE of ARCHITECT and SURVEYOR FOR SALE, South of England. Established 14 years. Income 250*l.* to 350*l.* per annum. Good reason for selling.—Address, VENDOR, care of Advertising Offices, 10, High Holborn, W.C.

LEEDS FIRM, calling upon architects, builders, ironmongers, &c. throughout the North of England wish for one or two good AGENCIES to work along with their own business. Good show room and storage accommodation if necessary.—Address, BUILDINGS, care of Green, Advertising Agent, 88, Albion-street, Leeds.

TO LIME, CEMENT, and BUILDERS' MERCHANTS.—SITUATION Required as DEPOT MANAGER, TRAVELLER, and COLLECTOR. North London preferred. Advertiser having been trading some years in one branch, will surrender goodwill of same on terms.—Address, Box 172. Office of "The Builder."

PARTNERSHIP WANTED in old-established architectural practice.—Particulars, in confidence, to A.R.I.B.A. at Shelley's Advertising Offices, 38, Gracechurch-st. E.C.

PARTNERSHIP (Active or Sleeping; Building and Contracting), 1,000*l.* to 2,000*l.* profitably employed. Good opening for a young man able to take office department. Best references given and required.—Apply, in first instance, Box 201, Office of "The Builder."

PURSUANT to an Order of the Chancery Division of the High Court of Justice made in the matter of the estate of Mary Ann Emma Tucker deceased and in an action of Boydell *v.* Tucker 1896 T. No. 1458 the CREDITORS of MARY ANN EMMA TUCKER late of 7 Lalor-street Fulham in the County of Middlesex formerly of 124 Euston-road in the same County and afterwards of 69 Ormside-street Old Kent-road in the County of Surrey who died on or about the 15th day of July 1896 either against her personally or as Executrix of her late husband Charles Tucker and the CREDITORS of the said late CHARLES TUCKER of 124 Euston-road aforesaid Coach and Cab Builder who died on or about the 22nd November 1893 and all other Persons having Claims against his estate either against him personally or as Executor de son tort of his Mother the late Elizabeth Tucker late of 124 Euston-road aforesaid who died on or about the 13th day of January 1873 or otherwise are on or before the 30th day of June 1897 to send by post to Mr. WILLIAM THOMAS BOYDELL Junior of 1 South-square Gray's Inn W.C. the Solicitor of the Plaintiffs the said William Thomas Boydell and Frederick Frampton the Executors of the said Mary Ann Emma Tucker and also of the said Charles Tucker their Christian and surnames addresses and descriptions the full particulars of their claims a statement of their accounts and the nature of the securities (if any) held by them or in default thereof they will be peremptorily excluded from the benefit of the said order. Every Creditor holding any security is to produce the same before Mr. Justice Stirling at his Chambers 293 Room the Royal Courts of Justice London on FRIDAY the 9th day of JULY 1897 at TWELVE o'clock at noon being the time appointed for adjudicating on the claims and all persons who have in their possession any cabs or other property of the said Charles Tucker deceased under or by virtue of any hiring agreements or otherwise are required on or before the said 30th day of JUNE 1897 to send by post to the said William Thomas Boydell Junior at the aforesaid address their Christian and surnames addresses and descriptions and the full particulars of any such hiring agreements and the amounts due thereon or in default thereof the said hiring agreements will be treated as forfeited and such legal proceedings will be taken against them as the nature of the case may require.

Dated the 3rd day of March, 1897.

THOS. A. ROMER,
Master of the Supreme Court.
W. T. BOYDELL, JUNR.
Solicitor.
No. 1, South-square, Gray's Inn, London, W.C.

TECHNOLOGICAL EXAMINATIONS, 1897.
CITY AND GUILDS OF LONDON INSTITUTE.
The Institute's EXAMINATIONS in TECHNOLOGY will be held on APRIL 24th, MAY 1st, 3rd, 4th, 5th, 6th, 7th, and 8th.
All applications for examination in Technology must be forwarded to the Institute on or before MARCH 29th.
Only in exceptional cases, and by payment of an additional fee, can applications be received from Local Secretaries after that date.
Candidates on Technology, not attending any registered class, should apply not later than MARCH 19th to the Secretary of the nearest local centre.
Applications from individual candidates for examination at the offices of the Institute should be made not later than APRIL 17th, addressed City Guilds Institute, Examinations Department, Exhibition-road, S.W. and should be accompanied by a postal order for the amount of the fee.

ACTON DISTRICT COUNCIL.
WANTED, a PAVIOR able to assist in Bricklaying and Road and Sewer Repairs. Wages 30s. per week, rising 1s. per week each year to 33s.
Applications in writing, stating age and previous experience, to be addressed to me, and delivered here not later than THREE p.m. on 6th APRIL.
(By order) D. J. EBBETTS,
Surveyor to the Council.
No. 242, High-street, Acton.

COUNTY BOROUGH OF SALFORD.
WANTED in the Borough Engineer's Office, a good general ASSISTANT.
Salary £120 per annum.
Applications, accompanied by not more than three testimonials and endorsed "Surveyor's Assistant," must be delivered to me not later than THREE p.m. on THURSDAY, the 25th inst.
By order,
SAML. BROWN, Town Clerk.
Town Hall, Salford.
March 15th, 1897.

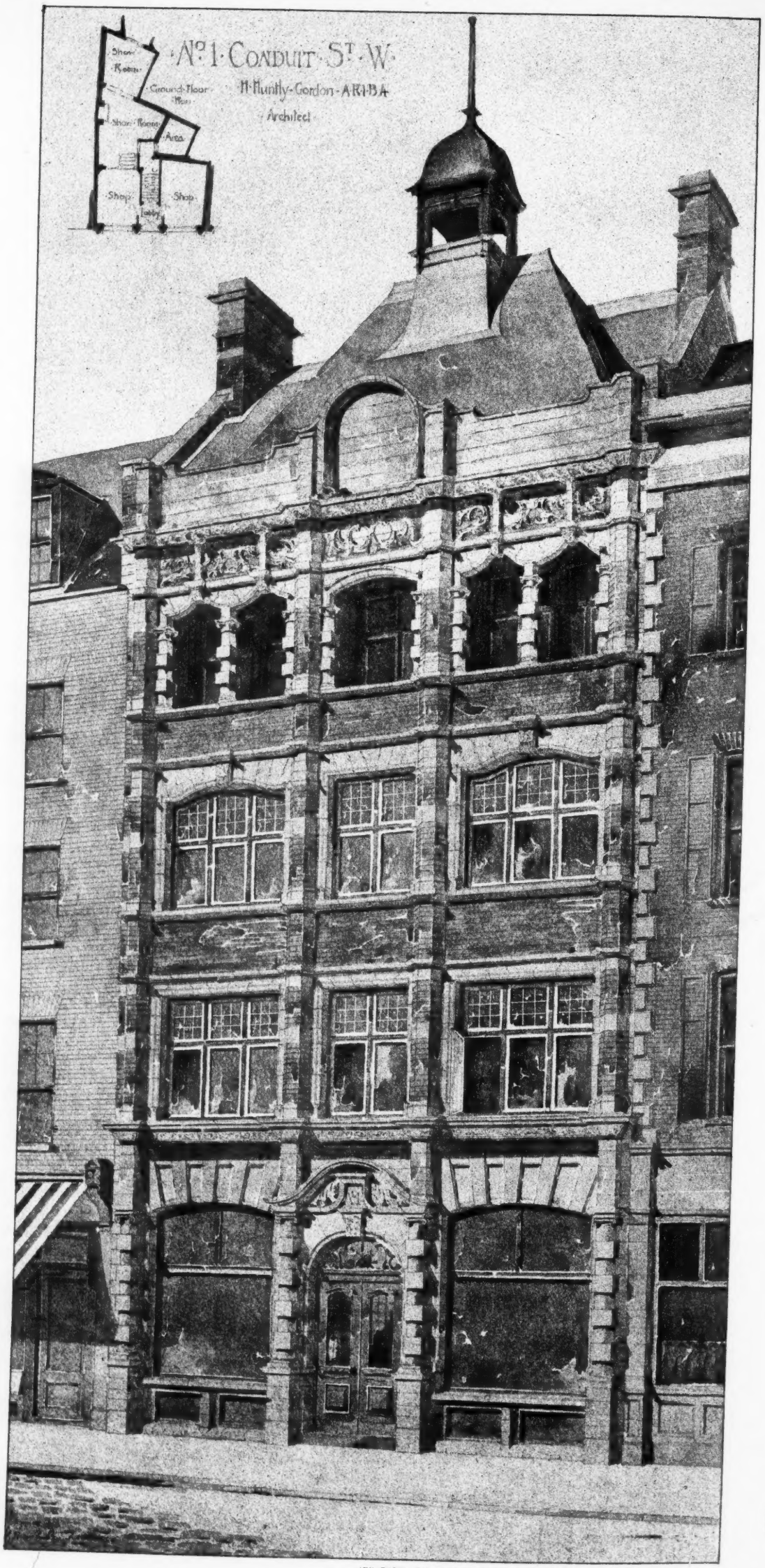
TO QUANTITY SURVEYORS.—Wanted immediately, for about two months, possibly longer, an experienced ASSISTANT, able to take-off. Must be quick, accurate, and used to first-class work.—Write, stating age, salary and references, to F.S.I. care of Housekeeper, 33, New Bridge street, E.C.

DRAUGHTSMAN WANTED for a builder's office. Must be experienced in repairs, specifications, quantities, and estimates.—State age, length, and nature of previous engagements, and salary expected, to WORTHING, care of Mr. F. Algar, 11, Clement's-lane, London, E.C.

JUNIOR DRAUGHTSMAN WANTED in Builder's office.—Address by letter to Box 189, Office of "The Builder."

TEMPORARY ASSISTANT WANTED at once. Good draughtsman.—State terms, ELLIFF & MARTIN, Architects, Caterham Valley, Surrey.

ARCHITECT'S ASSISTANT Required. Must be thoroughly competent and practical, as well as a neat and quick draughtsman, and able to prepare full working and detail drawings, &c.—Address, giving full particulars, age, past experience, and salary required, to Box 290, Office of "The Builder."



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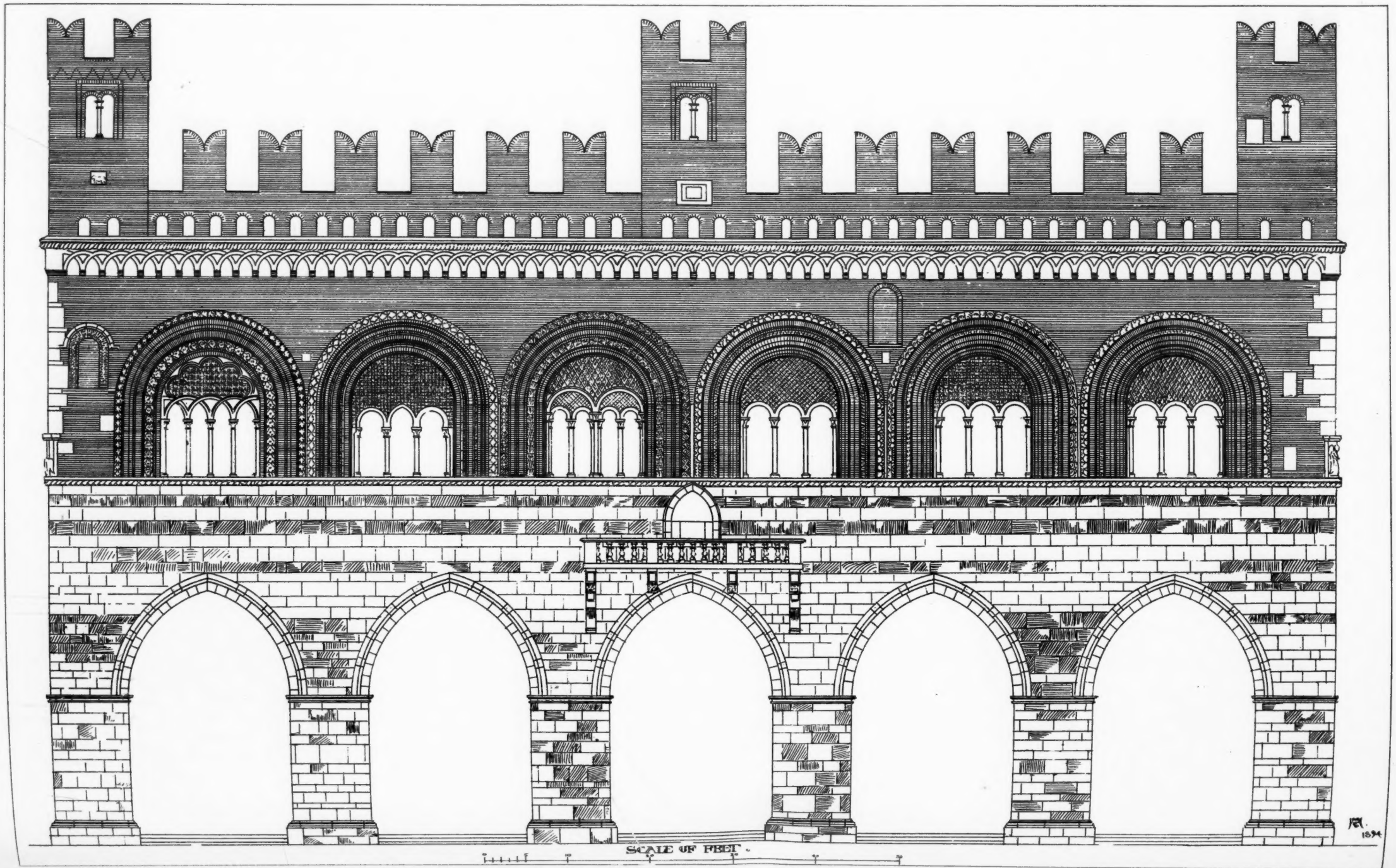

PALAZZO COMMUNALE, PIACENZA.—Drawn by Mr. M. Starmer Hack, A.R.I.B.A.

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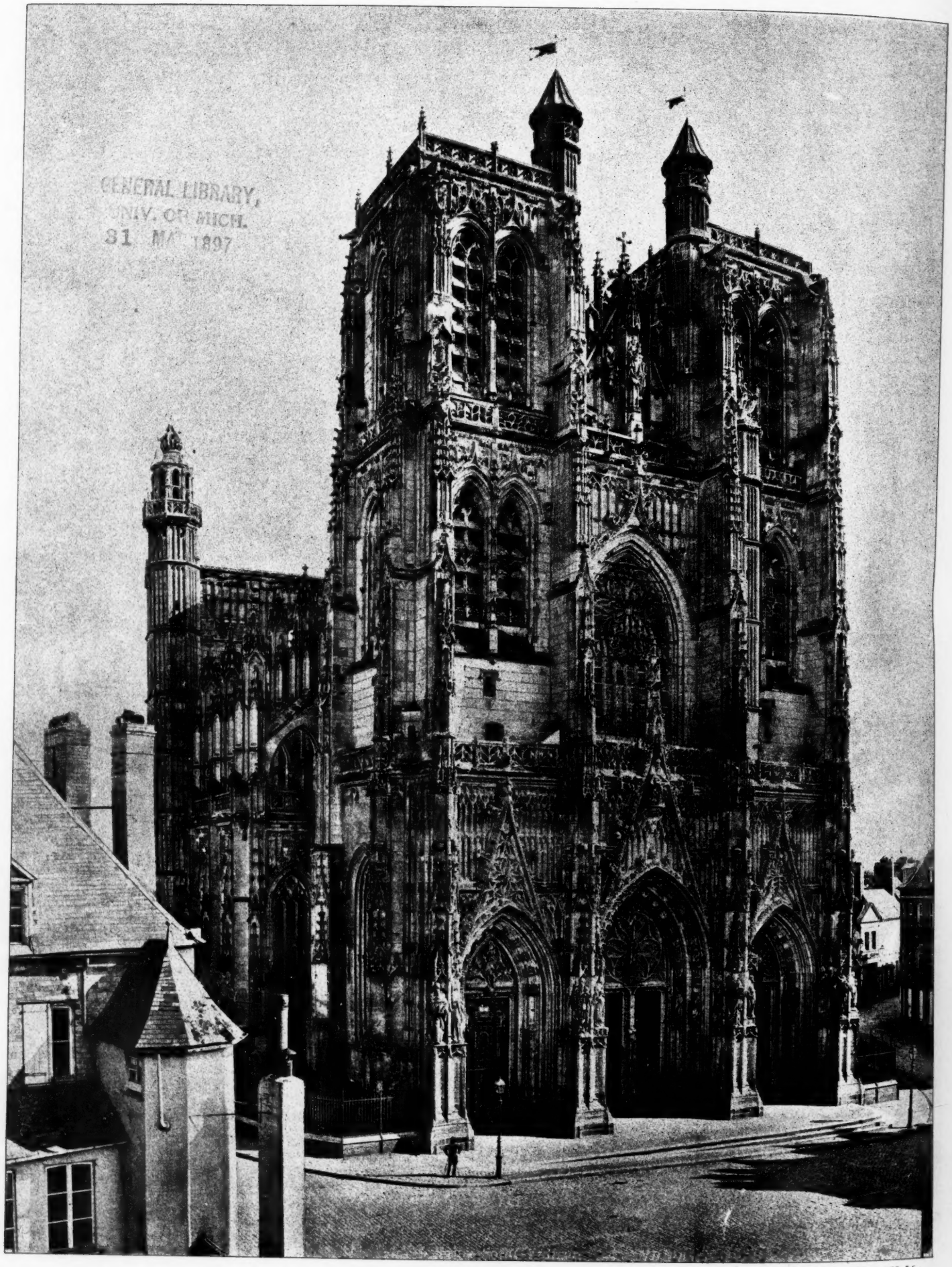

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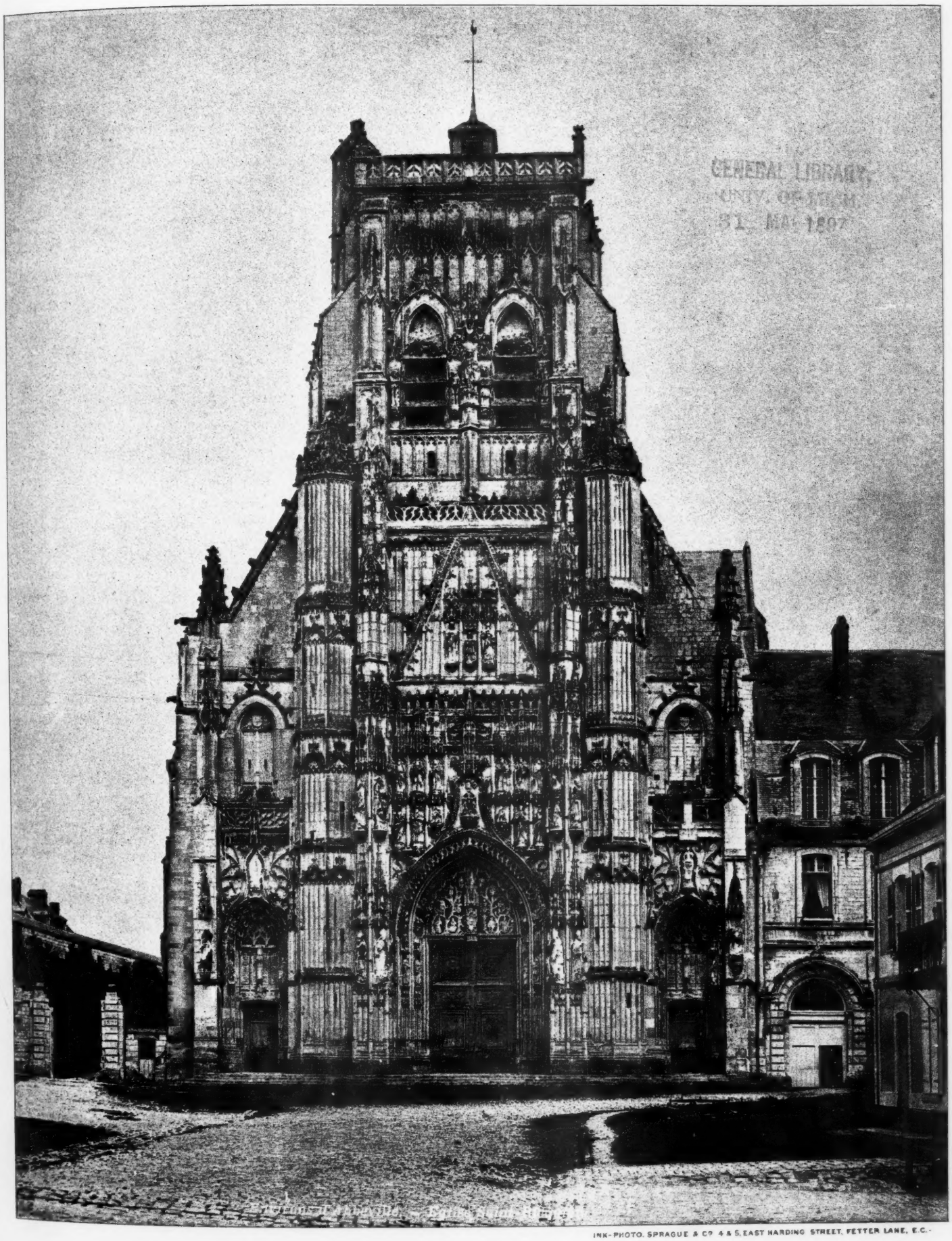
(In illustration of Professor Aitchison's Royal Academy Lectures.)



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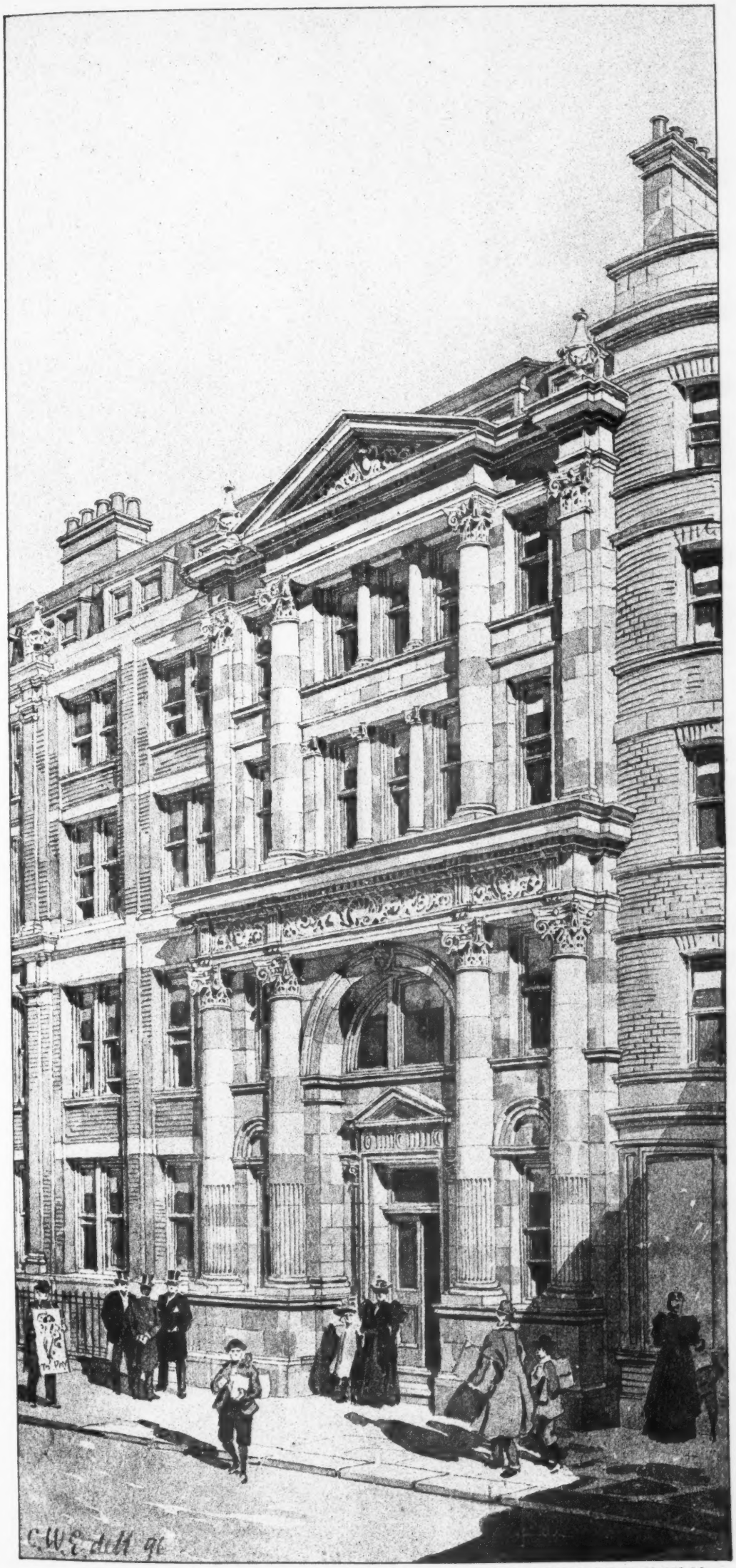

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SKETCH FOR NEW ROOM AT "THE WOOD... ...DENHAM.

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WOOD[illegible]DENHAM.—Mr C. H. M. Mileham, Architect.